CURRENT NOTES

Helping Atari Owners Through the World of Computing

Vol. 14, No. 4

May '94
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CN 1404

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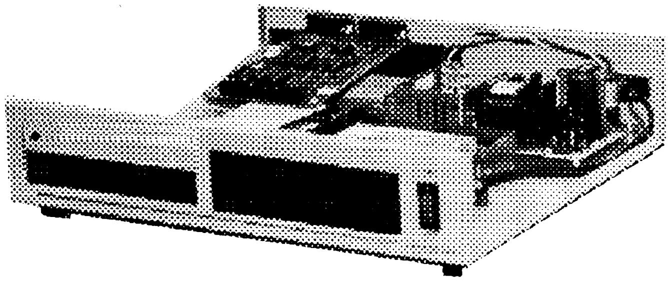

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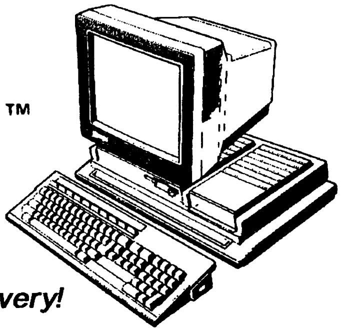

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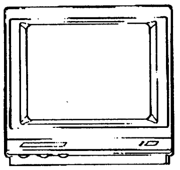

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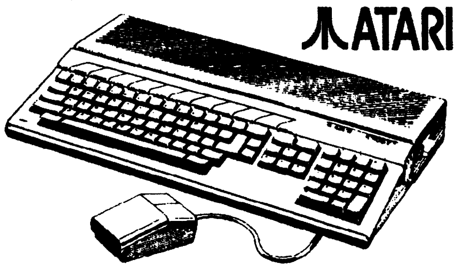

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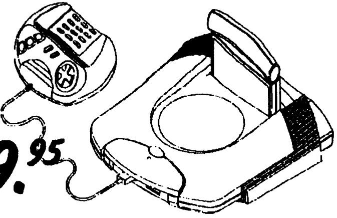

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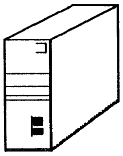

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CN DOM-3 - May 1994

Agenda, graphic calendar creator displays events for an entire month. **LED Panel** v2.30 offers LED lights in your menu bar. **Deluxe Invaders**, a duplicate of the old 8-bit cart by Roklan. **TLC Address Book**, v5.0, simple, yet powerful name and address book. **MiniDraft**, CAD program from the UK. (m) **Quote**, randomly selects quotations to displays on screen. From Henry Van Eyken: **The Fleabyte Accessories**, visible, onscreen calculators that can transfer information directly to other applications such as wordprocessors. **Wormhole**, a related acc that reads data of a GEM interface for processing and, typically returns answers to the text editor in use. **Quick Focus**, returns a table of answers instead of a simple calculation. Shareware from JV Enterprises: **Outofths**, a typing program, in a game environment. (c) **Hooked on Math**, a math program with multiplication, addition, and subtraction. (c) **Cops'N'Robbers**, a two player chase game. (c) **Magnobal**, like Hockey with hover crafts that get a ball and shoot it to a goal

CN DOM-2 - April 1994

Alice, Another Little C Editor, V1.42, is a GEM-based text editor for ATARI ST. **ColorBurst III**, a full-featured paint program that is SpeedoDOS, Multitos compatiable. **The Clipboard Setter**, accessory allows you to redirect the system clipboard to the drive of your choice. **The Atari Glossary**, emphasizes the jargon that is specific to Atari, TOS and GEM. **HD Free** – A CPX that shows a graphical representations of your free hard drive space and Memory. **Maus-Window**, v.1.25 of this .acc/.prg allows you to "top" a window (bring it to the top of all the other open windows and activate it) simply by moving your mouse pointer over it. **MemWatch**, graphically displays memory usage in your system so you can spot memory fragmentation when it occurs. **Mouse-Ka-Mania II**, lets you replace any of the standard mouse cursors with fun and flashy animations; more than 140 animated and single-frame mouse cursors are supplied in the package. **QSort**, v1.0 rapidly sorts up to 65535 ASCII lines. **Searcher**, search your floppy or hard drive and, when you find the files you want, you can delete them, change their attributes, hide them and more. **ST_Tools**, unfragment your hard drive, edit sectors and files, etc. **Whatis**, v6.6 identifies over 160 different file types-ARC, LZH, ZIP, ZOO, pics, accessories, animations, etc. **Wing Lord**, a great 'Joust' clone with a few new twists added to give the game a new feel.

CN DOM-1 - March 1994

Ascii-View, v3.75, Replaces the [Show]-[Print]-[Cancel] feature of the standard ST Desktop. **Clock**, Clock dispalys an analog clock on you monitor. **Grammarian**, V1.4.0. Examine text files for word usage, spelling, and grammatical rules. **Magic Spell**, V2.1. Shareware spelling game/program. **MasterBrowse** v3.5, The *BEST* ST/STe/TT/Falcon/MultiTOS Text File Viewer! **Recipe Box**, provides easy entry, storage, and access to favorite recipes. **Sleuth**, Colorful arcade action fun game. **Teddy-TERM** v2.10, a fully functional communications terminal.

CN DOM-0 - February 1994

ST ZIP v2.4. STZip allows you to compress and decompress files, i.e. to reduce their lengths. STZip uses files that are compatible with PKZip 2.04 on the IBM PC, and the Unix Info-Zip programs Zip 1.9/Unzip 5.0.

LZH v2.99. Latest version of LHARC from C. Grunenberg now includes an English language shell that takes advantage of all LHARC features and allows you to compress and uncompress files with ease.

CURRENT NOTES

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Time to Renew?

Take a peek at your mailing label. If you see the expression **9405** on the first line, then your subscription expires in 1994, month 5, i.e. this May issue is the last one in your current subscription. If you see **9406**, your subscription will expire in June. Please **RENEW** as soon as possible to avoid missing any issues of CN. You can renew using your MC or VISA card by calling (703) 450–4761 (evenings). Many thanks for your continued support!

Moving?

Don't forget to send in a CHANGE OF ADDRESS notice if you are moving. Current Notes is distributed via 2nd class U.S. mail. The post office does not forward 2nd class publications; they throw them away!

The Cover: Would you believe it? Spring time is finally here. April showers have brought May flowers. Photo (c) 1994 by C. Joyce Waters.

User Groups. I recently received *Update Atari*, a newsletter from HACE—the Houston Atari Computer Enthusiasts, and feel the need to comment on it. First, the format: it consists of six, 8.5" x 11" sheets stapled together to form a 12-page newsletter. It was produced with *PageStream 2.2b* and printed on a DeskJet 500. This format is clean and easy to read. The issue I received contained the following articles :

- *PageStream 3.0* letter campaign
- XSRAM, George Iken's Atari commentary
- Review of *Home Accounts 2*
- Check Writing for *Data Manager*

Overall, I liked this little newsletter and hope to continue receiving it. If you are anywhere in the Houston Area, I recommend joining HACE. (Houston A. C. E., P.O. Box 820335, Houston, TX 77282-0335.)

I've been hearing a lot about "the death of user's groups." Is this true? I know that in my location (Maine), there hasn't been an Atari user's group in about 10 years. But what about the rest of the country? If you are in a user's group and have some thoughts to share with the rest of the Atari community, please contact me. If you publish a newsletter, I would like to receive it so that we can let people know that there are user's groups out there.

Commodore News. Things aren't looking all that good for Amiga users. Commodore appears to be headed, like Atari a year ago, for bankruptcy. Their stock has dipped well below $1/share and trading was actually suspended for a day because there were more sellers than buyers. Unfortunately for Commodore, their Amiga CD32 doesn't appear like it will have the success that Atari's Jaguar will, so they might not be able to recover.

Calamus SL. In last month's issue, you'll find an amnesty upgrade offered by Nathan Potechin of DMC. In a nutshell, he is offering to let everybody upgrade to *Calamus SL* at the same price that *Calamus* users were allowed to upgrade. Please read this letter and, if you use *Calamus SL*, take advantage of his offer. I hear that people have purchased Atari computers just to use this program.

Falcon030. This past month I got to use a Falcon for the first time. I must say that I was more impressed with it than I expected to be. It wasn't as fast as I would have liked, but then I didn't have the Falcon-compatible version of *Warp 9* to test on it. I loved the 640 x 480 16-color resolution on a SuperVGA monitor. The demos for this machine are outstanding. Software compatibility was OK, but the machine did crash several times during use. If only it didn't have such a poor keyboard.

TT030. Although I wish I had the opportunity to use a TT030, I can at least tell everyone that they are again available (Why? Rumor has it is that they were built for Jaguar developers—with a few making it to dealers.) Sure, this machine needs updating (like perhaps a 68040 and better graphics modes), but it is currently the best we have.

Computer Industry Shakeup. The computer industry is going through some changes. There is a flood of new processors on the market: Pentium, PowerPC, Alpha, and MIPS. Each of these chips (except the Pentium) is trying to take away from Intel's virtual lock on the market. Currently, Atari doesn't feel there is enough money to be made in the computer market—which, unfortunately, is true. Computers just don't have a high enough profit margin these days, so unless you sell an enormous quantity, you're guaranteed to make almost no money.

Although it's not what (Atari computer) people want to hear, Atari is focusing all of its energies on Jaguar so that it will again become a profitable company. We can only hope that the computer industry changes so that small companies will be able to make money when they attempt to go against the grain.

Atari vs. The Rest of the World. With the Falcon retailing for $1,299 (without a monitor) and several clones and Macintoshes available for the same or lesser amounts (including a monitor), I think it is time Atari comes up with a new slogan. Although I don't remember Atari using their "Power Without the Price" slogan since the late eighties (indeed, I don't remember them advertising their computers since the late eighties), it definitely no longer applies. Perhaps a new slogan is needed? My recommendation is: "Pretty good power for a pretty good price." Whaddya think?

Tax Return Time. Having just received my tax return, I decided to use some of it to purchase some products for my MegaSTe. I encourage others to do the same. I am now the proud owner of *Diamond Edge*, *ICD SCSI Pro Utilities*, *MultiTOS*, *Calamus* and an Epson Stylus 800 inkjet printer. The software products you have probably heard of, but I would like to offer some comments about the Epson Stylus.

The Stylus 800 is the top-of-the-line Epson inkjet printer (their other model is the Stylus 300, which is slightly slower). The printouts from this printer are amazing, much better than

(Continued on page 5.)

Letters to the Editor

Rx for Atari

Dear Joe,

Since our last communication, I have started an Atari business inside a drug store at Melbourne, AR. It is not the same as having my own store, but is very cost-effective as the pharmacists supplies the space, business license, tax collection and display.

In reply to letters in your Dec/Jan 94 issue: James A. Farmer said there was no Atari Store in Little Rock. Yes, there is ... Cloverdale Pharmacy in the Cloverdale Center has been selling Atari's since the early 1980's and continues to do so. You may not see much on display, so ask ... he has a back room full and is reorganizing to sell Falcon's. He can get one for you now!

Carlos Romero wished for an upgrade to *AtariWorks* to do columns, etc. Not so! 'Tis the documentation that needed upgrading, not the software. Get a copy of *Papa's Grafik Guide to AtariWorks WOrd Processor*. This wonderful book costs about $16.95 and tells everything you ever wanted to do with *Works* but thought it wouldn't (including columns).

Carlos also alluded to the need to use a Mac for script writing. Again, not so. Walter Koenig (Star Trek's Checkov, uses an ST specifically because it is so easy on one. There are templates for both *Pagestream* and *Word Perfect* (I believe originally published by *START* magazine, now in the public domain) to make script writing almost automatic.

So hang with Atari! Not only is everything easier, anything is possible.

Sincerely,
Stephen LaFevers
Vioila, AR

Removable HD for 8-Bit?

Hi!

Being disappointed by former Atari magazine publishers, I reluctantly subscribed to *Current Notes*. First issue arrived—it was a good move. Thank you for Atari 8-bit support. 130XE and I are going to enjoy you.

March 1994 issue, page 10, had an article about removable cartridge drives supplied by Toad Computers. I called.
"Not compatible with 130XE!!"

If you print this, perhaps some innovative developer will read and devise a cartridge for Atari 8-bit file storage.

Friendly yours,
Joseph Hicswa
Passaic, NJ

One MegaByte AtariWorks

Joe,

I received the April issue of CN today and noticed the lead letter regarding *AtariWorks* being "too big." I would like to make a reply to that. There is a prevalent misconception that *AtariWorks* will not run on a one mByte machine. My reply is as follow:

Dear Brian Earl Brown,

AtariWorks with *SpeedoGDOS* is perfectly capable of running on a one mByte system. Document size will be limited to roughly 3 to 5 pages and graphics, if any, must be kept small. The trick is to minimize the Speedo font caches. With a one kByte Character cache, a 24 kByte Miscellaneous cache and 0 kByte bitmap cache, I am able to create documents in *AtariWorks* with access to all 63 of my Speedo fonts.

This is equivalent in document size and graphic limitations to *Pagestream* running in 1 mByte. Print speed will be somewhat slower - on a par with *TimeWorks Publisher* - but the quality of output will be superb.

Michael 'Papa' Hebert
Honolulu, HI

STatus Atari: *(Continued from page 4.)*

the lowly 24-pin dot matrix I have been using. It is compatible with just about every Epson LQ printer, and what program doesn't come with an Epson LQ driver? In my preliminary testing, I have found that it works great with *Calamus* (needs a slight margin adjustment) and *WordPerfect*. I hope to have a more detailed review in the coming months.

Orphans?. Are we orphans? Like the 8-bit users before us, will we be abandoned by Atari for greener pastures? Indeed, we cannot expect a company to remain in a market it cannot make money from. However, I would like to get a straight answer from Atari. Maybe they don't have an answer, yet? Somehow, I find it hard to believe that they will attempt to make a comeback in the computer market. Stranger things have happened.

Sam Tramiel Down on Atari?. Sam Tramiel was interviewed in a San Jose newspaper, referring to the computer division as a "failure." He also said that Atari has "backed out" of the computer market, obviously to focus completely on the video game market.

These are not the kinds of comments I would like to see the head of Atari making. It is discouraging for us diehards.

That's A Wrap. I hate closing on such a negative note, but that's the way it goes. For now, enjoy the rest of this issue—take it outside (with a cup of lemonade) and celebrate the return of spring.

GOOD NEWS AND BAD NEWS

Atari Industry News and Announcements

New Products

Cybercube Research Announces Module-Packs

Cybercube Research Ltd. is pleased to announce the availability of the new *Artis 3/Prism Paint II* Module-Packs designed by Dieter Fiebelkorn, author of several popular Atari utilities. These Module Packs contain several add-on modules that allow *Artis 3* or *Prism Paint II* to load or save (depending on the module) a multitude of today's most widely used graphics image formats.

This amazing collection of modules adds a new level of processing power to your applications. They run in any display mode supported by *Artis 3* or *Prism Paint II*. Imagine yourself working with dazzling JPEG True Color images, or utilizing the flexibility of importing or exporting IFF graphics. Use the Unix formats for a more professional workstyle. Or simply add the Atari specific modules to increase your compatibility with other imaging applications.

These Module-Packs have been compiled to give you a fresh new way of working with your programs and they automatically handle all the color processing, palette manipulation, dithering and conversion tasks easily and comfortably, so that you can fully concentrate on your creative job!

Atari format package, $15 (Art-Director, Degas, STAD, Spectrum 512, and Tiny); DTP/True Color Formats Package, $20 (Cranach Studio, JPEG, Targa, and TIFF Images); Cross Platform Compatibility Package, $20 (Black&White, IFF, Mac Paint, Paintbrush, and TIFF); Unix Formats Package, $20 (GIF, JPEG, PBM, PGM, PNM, and PPM Bitmap, Sun Rasterfile, and X-Bitmap).

Cybercube Research Limited, 126 Grenadier Crescent, Thornhill L4J 7V7 Ontario, Canada.

Phones: (905) 882 0294 Mon-Fri, 10 AM to 4 PM, EST (Toronto); Fax: (905) 886 3261; BBS: (905) 882 5895 1,200-14,400 baud, 24 hours/day. E-mail address: GEnie (CYBERCUBE); CRS-Online (Cybercube.Research); and InterNet: (cybercube.research@camrem.com or cybercube@genie.geis.com).

ICD Announces Cat Box for Jaguar

Black Cat Design, a designer of computer peripherals and accessories, and ICD announced Cat Box, the complete interface adapter for the Atari Jaguar 64-bit game system. Cat Box plugs directly into the AV/DSP ports on the back of the Jaguar. Cat Box provides all of the standard connections that Jaguar customers desire. Standard ports include: S-Video, Composite Video, left and right Audio Out, Dual Stereo Headphones, Analog RGB Video, RS-232, ComLynx, and DSP. All connectors are "industry standard."

Standards are a big part of Cat Box and connectivity is the key. The RS-232 port will connect to standard modems. The ComLynx port will join other Jaguar and Lynx game systems for multi-player games and other networking ideas. Black Cat Design is actively working with game developers to ensure support for these ports.

The Cat Box will begin shipping early next quarter at anMSRP of $49.95. ICD is taking orders now with shipments expected in May. For further information, contact ICD Public Relations in the United States by phone (815) 968-2228 extension 222 or fax (815) 968-6888. Cat Box is a trademark of Black Cat Design. Other trademarks are those of their respective holders.

Atari Ships Tempest 2000 for Jaguar

Atari Corp. announced it is shipping *Tempest 2000* for Jaguar, its award-winning 64-bit game system. *Tempest 2000* was recently awarded "CES Game of Show "(*Electronic Games Magazine*), "Game of the Month/ March" (*DieHard GameFan*) and "Game of the Month/ March" and "Editor's Choice Gold Award" (*Electronic Gaming Monthly*).

The original *Tempest* is one of the most popular video games in arcade history. With *Tempest 2000*, players get four games on one game cartridge: the original *Tempest*, *Tempest Plus*, *Tempest 2000* and *Tempest Duel*.

"*Tempest 2000* is the hottest selling title on Jaguar today," said Peter Roithmayr, senior buyer at Electronics Boutique. "We sold over 60 percent of our *Tempest 2000* stock within four days; most sold in the first two days of shelf life. *Tempest 2000* is in very high demand because the popularity of the Jaguar has far exceeded the gaming industry's expectations."

"*Tempest*, by itself, is worth the price of the Jag. *Tempest 2000* for Jaguar is further proof that the next level of gaming has arrived," said Dave Halverson, *DieHard GameFan*.

Tempest 2000 players venture through 100 unchartered galaxies filled with "Demon Heads," a very aggressive and deadly enemy and "Warp Bonus Tokens," which count toward bonus levels and a free instant "SuperZapper," a player's defense that can destroy everything on the screen.

Tempest 2000 features two-player cooperative play and more than 30 minutes of pure CD-quality techno-rave soundtrack. In addition, powerful 3D polygons provide realistic parallax star fields, particle displays deliver realistic explosions, Melt-O-Vision graphics provide stunning graphic effects, and Cycle shading gives players accurate depth perception.

Atari *Tempest 2000* is immediately available through all Atari-authorized retailers for $59.99.

All trademarks are the property of their respective owners. For further information contact Lynn Thompson, (408) 764-0740, or Karen Magill, (617) 494-8202 of Cunningham Communications, Inc. or Bill Rehbock, (408) 745-2000, of Atari Corporation.

Branch Always Announces PC XFORMER

Branch Always Software announces the upcoming release of *PC Xformer*, a DOS-compatible version of the Xformer series of Atari 8-bit emulators. With our eight years of experience developing Atari 8-bit and Atari ST emulators, this emulator is by far the fastest and most compatible Atari 8-bit emulator available on any computer platform.

For the first time it is now possible to run Atari 8-bit software on the same computers that you run DOS and Windowssoftware on, as fast or even faster than a real 8-bit computer. Imagine the ease of use and simplicity of using Atari Basic on a PC or even on a small notebook computer that you carry with you.

Hardware requirements are simple: a PC running MS-DOS (or a compatible operating system), 640K of RAM, a VGA card, and a 286 compatible CPU. This includes computers using the 386, 486, and Pentium chips, as well as 286 emulators running on non-Intel based PCs. A CPU at least as fast as a 33 Mhz 386 is recommended for full speed emulation.

Optional hardware not absolutely required (but recommended) includes: a Sound Blaster compatible sound card, a game card with 2 joysticks, and a hard disk. A SuperVGA card is not required to run PC Xformer.

PC Xformer is a brand new DOS version of *ST Xformer*, the popular Atari 8-bit emulator for the Atari ST that first appeared in 1987 in ST LOG magazine and most recently came bundled with the *Gemulator* Atari ST Emulator for DOS.

Unlike *ST Xformer*, which was limited in speed and graphics capabilities imposed by the Atari ST hardware, *PC Xformer* has no such limitations when used on a fast enough PC. Player Missile Graphics are now fully supported, as are all GTIA graphics modes and Display List interrupts. Vertical Blank and Display List interrupts occur in real time, allowing for on-the-fly color changes (and other animation tricks that were not previously supported in *ST Xformer*) allowing *PC Xformer* to run any Atari 8-bit software that you transfer to your PC.

To allow the usable playing of games that use timing loops instead of interrupts, an option in *PC Xformer* allows you to force it to "slow down" to normal speed. Or let it rip at maximum speed to get the most performance out of your Atari Basic programs.

As with *ST Xformer*, the bank switched memory of the XL/XE is emulated, and *Atari Basic* can be toggled on and off. All popular 8-bit DOSes are supported, including DOS 2.0, DOS 2.5, MyDOS, and disk based versions of SpartaDOS. Disk files are handled by using virtual disks, the same method used by *ST Xformer*, *Gemulator*, and most other emulators. Up to 8 virtual disks can be used at once, as drives D1: thru D8:.

Users of *ST Xformer* can directly use their existing virtual disk files (.XFD, .XHD, .SD, or .DD files) with *PC Xformer* without modification. Users of the SIO2PC cable can also directly use their "ramdisk" files with *PC Xformer* without modification. Any size virtual disk is supported, from the standard 90K single density disk to a 16 megabyte hard disk.

Two PC style joysticks are supported using the game i/o card found in most PCs. Self-centering joysticks are recommended over standard analog joysticks.

Users wishing to receive more information about PC Xformer or to place an advance order should contact Darek Mihocka at Branch Always Software at the address or numbers listed below.

Aso available from Branch Always Software: *Gemulator 3.02*–The Atari ST Emulator For DOS Compatible PCs. Turns a 486-based PC into an Atari ST clone with up to 8 megabytes of RAM and up to 800x600 color SuperVGA graphics. Compatible with most non-MIDI Atari ST software and all version of ST TOS up to TOS 2.06.

PC XFORMER, by Darek Mihocka, will be available June 20, 1994 from Atari 8-bit and PC dealers. Retail price: $39.95 U.S. ($29.95 when ordered before June 30, 1994.)

For additional information, contact Branch Always Software, 14150 N.E. 20th Street, Suite 302, Bellevue, WA 98007. Phone: 206-369-5513; Fax: 206-885-5893. CIS: 73657,2714; GEnie: BRASOFT.

Label Plates Available from Carter's Creative Computer

Carter's Creative Computer is pleased to announce that *Label Plates–Templates for Avery's Laser Products* is now available! *Label Plates'* templates were designed with and specifically for *Calamus*, DMC Publishing Inc's preeminent desktop publishing and color pre-press application(s). Therefore, you must have some version of *Calamus* (1.09N, S, SL or WindowsNT) in order to use *Label Plates'* templates.

Label Plates contains 70 templates, covering the complete line of Avery Laser Products, including multiple templates for all of Avery's labels. This multiplicity gives you specific templates designed for specific purposes. For example: using one particular *Label Plates* template for Avery's #5260 Address Labels, you could quickly produce a complete set of mailing-labels simply by importing a list of names and addresses from a data-base. Or, using a different *Label Plates* template for that same Avery label, you could quickly produce full sheets of your own return-address labels simply by entering your own return address one time.

Label Plates' templates have pre-defined but, user-modifiable areas for entering/importing text. This allows you to quickly enter/import text and, by changing a few of the pre-defined text-settings, you can utilize any Calamus-compatible typeface/font.

For more information, contact Jimmy Carter, Carter's Creative Computer, 2321 Pinneberg Avenue, Rockville, Md. 20851. Phones: (301) 424-6672, (M-F, 9-6 EST only please!); FAX: (301) 424-6672. GEnie: J.P.C.

Graphics Effects Releases Avery Plus Label Templates

Graphic Effects, the company that brought you the Atari Font Resource Guide, the largest collection of Public Domain and Shareware Fonts, is proud to present *Avery Plus*, a collection of templates for Avery/Dennison's line of Specialty Labels. These templates are compatible with *Pagestream* and all versions of *Calamus*, including *Calamus NT*!

It is no longer a chore to create great looking labels. *Avery Plus* is an easy and efficient way to produce professional looking labels with graphics from virtually any printer and includes preset layouts for Avery laser products.

Avery Plus (Calamus/Pagestream) retails for $34.95 plus $1.50 shipping and handling.

For more information on Avery Plus or The Atari Font Resource Guide, which now contains over 500 PD/Shareware fontsfor all versions of *Calamus* and 370 ATM Type 1 fonts for *Pagestream*/*Windows*/etc, contact: Graphic Effects, 197 North Washington Avenue, Centereach, NY 11720-1925. Phone: (516) 471-1529 (Voice and FAX).

Product Upgrades

Missionware Releases CyberDrome 1.2

Missionware Software is proud to present an upgrade to one of the best games ever for Atari computers. If you don't already own *Cyberdrome*, this is your chance to experience the thrill of fighting CJER, the rogue Artificial Intelligence virus. And not only can you fight CJER yourself, but you can play with a friend, too!

CyberDrome Version 1.2–New features: More realistic Raider movements–Raiders never stop, they keep shooting and running all the time; Drone (in solo mode) now acts as real wingman–it attacks the Raiders in very realistic ways and it is fun, sometimes, to just sit there and watch a Raider and the Drone battle it out. New Weapon: Bore-sight Tracking Pulsar locks on to nearest bad guy; just press the trigger key to fire. New Sky: We've added a "painted" image of a gridded sky with parts of it "eaten" away. It really adds the "other world" feeling of the game. In addition, the Weapons-Scope view is no longer wire-frame. Start Time: Every level now starts at the BEGINNING of an ATTACK Cycle, so there is only a few minutes to wait before the action begins. The rest of the Cycles remain unchanged.

Upgrades are available direct from Missionware for $15. Missionware Software accepts Personal checks, Money Orders, Visa, and MasterCard. To order, or for more information, contact Missionware Software, 354 N. Winston Drive, Palatine, IL 60067-4132. Phone: 708-359-9565

Compo Has SpeedoGDOS 4.2 Upgrade

SpeedoGDOS 4.2 is full of bug fixes and optimizations; it changes font IDs to avoid conflicts, which could easily arise with 4.1; it corrects a bug where the current directory was changed to the *SpeedoGDOS* font directory; it no longer uses a scratch buffer for effects, so if you've ever gotten the error message "not enough memory for scratch buffer" well, those days are over. There are some other minor internal changes. In general, it's just more stable.

SpeedoGDOS 4.2 is available for $20.00 from COMPO Software. Order it through email (with a credit card) or by writing to COMPO Software, 104 Esplanade Avenue, Suite 121, Pacifica, CA 94044. Phones–voice: (415) 355-0862; Fax: (415) 355-0869. GEnie: COMPO.

Oregon Research Announces Diamond Back 3

Oregon Research is proud to announce *Diamond Back 3*, a major upgrade to its premier hard disk backup and restore program. Among the enhancements to *Diamond Back* are: A completely redesigned icon and drop down list driven full windowed user interface; New Visual Directory tree interface for backup and restore path selection with easy point and click selection of paths and files; Multiple volume removable media (e.g. Syquest, floptical) support; Support for ANY SCSI tape drive attached to ACSI, TT SCSI, or Falcon SCSI-2 ports; Custom Backup configurations saved with "Human Readable" descriptions that you can remember rather than cryptic 8 character file names; Backup Logfiles remember all your backup options and where the files came from; and, finally, Multitasking background backups with any version of TOS.

Diamond Back 3 retails for $69.95 and is available now. Upgrades from previous versions of *Diamond Back* are $29 + $4 S&H from now until July 31, 1994 and $34 + $4 S&H thereafter. If you have not sent in your registration card then you will need to send your original disk (or a xerox copy of your original disk) with your upgrade order.

For more information, contact Oregon Research, 16200 S.W. Pacific Hwy., Suite 162, Tigard, OR 97224. Phone: (503) 620-4919; FAX: (503) 624-2940

Industry Update

CodeHead Announces New Calligrapher Gold Price

The realities of the Atari market are sinking in at CodeHead Technologies. With the release of *Calligrapher Pro* on a European magazine disk, CodeHead announces that it will drop the lower-end "Pro" version of *Calligrapher 3*. We will support current owners, of course, and we plan to offer upgrades and packages similar to those described in the magazine. These and other details will be released in the coming weeks.

Effective immediately, the retail price of *Calligrapher Gold 3* is only $99.00. World class document processing for under a hundred bucks!

CodeHead Technologies, P.O. Box 74090, Los Angeles, CA 90004. Phone: (213) 386-5735; Fax: (213) 386-5789.

Atari and Nintendo Reach Settlement

Atari Corporation (ASE:ATC) reported that Nintendo of America, Inc. and Atari Corporation have settled litigation concerning Atari Corporation's '114 Patent. The '114 Patent relates to horizontal scrolling in video games. The '114 Patent is part of Atari Corporation's portfolio of pioneering patents in the computer and video game field. For a cash payment, Atari Corporation granted Nintendo a license to certain patents in Atari Corporation's portfolio. The License does not include Atari Corporation's patents related to LYNX or patents pending relating to the JAGUAR technology.

Sam Tramiel, President of Atari Corporation, stated "This is an important settlement that will hopefully lead to resolution of other patent infringement claims." The '114 Patent and two other Atari Corporation patents are the subject of litigation between Atari Corporation and Sega, which is pending in the United States District Court, Northern District of California.

Atari Announces 4th Quarter and 1993 Results

Atari Corp. reported results of operations for the fourth quarter and year ended Dec. 31, 1993. Net sales for the fourth quarter 1993 were $8.5 million, as compared to $25.5 million for the same quarter 1992. For the fourth quarter of 1993, Atari incurred a net loss of $22.6 million, as compared to a net loss of $21.9 million in the same quarter in 1992. In the fourth quarter of 1993, the Company took charges, which included the writedown of $12.1 million in inventory and other items and $6.0 million for restructuring charges associated with the completion of the company's consolidation of its European operations and closure of its Australian subsidiary. For the year 1993, the Company reported sales of $28.8 million as compared to $127.3 million in 1992. For 1993, the Company incurred a loss of $48.9 million as compared to $73.6 million for 1992.

Commenting on the results, Sam Tramiel, president of Atari, said, "While we are disappointed in the magnitude of our losses in the fourth quarter and 1993 as a whole, we believe that we have substantially completed our transition from our older technology products and the consolidation of our worldwide operations. In the fourth quarter of 1993, we successfully launched the Atari Jaguar, the 64-bit interactive multimedia entertainment system. The intense game, *Tempest 2000* for the Atari Jaguar, ships this week and was recently awarded "Game of the Month" by *Die Hard Game Fan* and *Electronic Gaming Monthly* magazines. In addition to the initial launch markets of New York and San Francisco, we have now introduced Jaguar in Los Angeles, and as availability of Jaguar hardware and software increases, we will broaden our distribution throughout the United States. As a result of increased spending for marketing activities and until such time as shipments of Jaguar products are made in substantial volume, we do not expect to achieve profitability."

Atari Sales (Million $)

1992:	$127.3	$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
1993:	$28.8	$$$$$$$$

In addition, Atari Corp. entered into an agreement to sell 1.5 million shares of its common stock to Time Warner Inc. at a price of $8.50 per share for an aggregate investment of $12.8 million. The transaction would increase Time Warner's interest in Atari Corp. from approximately 25% to 27%. The agreement is subject to regulatory clearance and other formalities of closing. Sam Tramiel said, "We welcome the additional investment by Time Warner. These funds, along with our existing cash balances, will be used to expand Jaguar throughout the United States."

FTE Releases SpartaDOS as Shareware

It is with great pleasure that Fine Tooned Engineering (FTe) has decided to release *SpartaDOS 3.2f* (FTeSD32f.DCM) and the *SpartaDOS Toolkit* (FTeSDTKa.DCM) as SHAREWARE. (*DiskRX* was not ready for release with the FTeSDTKa.DCM file. We will be including the file with version "b" of this "Fine Tooned" product.)

We realize that a lot of people may have purchased these products, but in order for any more enhancements to happen, new registration is a necessity. A one-time fee of $19.95 is requested, and this will get you all three manuals (including shipping).

If the response to these SHAREWARE products is sufficient, we will be able to continue support. If not . . . Well, it's not because you weren't informed of the situation.

We do have new products scheduled for release, but it's been very expensive to acquire the ICD/OSS rights and set up our new facility. Your feedback and support are very critical right now, as we need to be able to estimate the quantity of these products to be manufactured (as well as being able to afford it!)

The following is a list a FTe products now shipping. Basic XL w/Toolkit & Runtime, $49.95; Basic XE w/XL Toolkit, $49.95; MAC/65 w/Toolkit, 49.95; Action! w/ Toolkit & Runtime, 49.95; P:R: Connection, 34.95; R-Time 8 Cartridge, 49.95; U.S. Doubler, 24.95; SDX 4.21 Upgrade ROM, 12.95; MIO 130XE Extender, 19.95; Flashback, 12.95; Printer Cable, 8.95; Modem Cable, 8.95; SpartaDOS SHAREWARE reg. 19.95.

We hope to hear from you soon! Fine Tooned Engineering, P.O. Box 66109, Scotts Valley, CA 95067. Phones: (408)Get-REAL (Info/Support); (408)438-6775 (Fax/BBS Line); (800)For-6502 (COD/VISA/MC).

Ten Ways to Nurture a Freshly Hatched Falcon

BY SCOTT R. CHILCOTE

I know the Falcon/bird metaphor has been abused heartily already, but let's face it; the name cries out for it! It's a great name for a fresh new computer, which may start off looking like an egg, but on closer examination, has the power to fly to new heights.

This article is for the user who is already somewhat familiar with the Atari ST, but wants to get the most for his or her money while enjoying the Falcon's many talents. Those curious about what the Falcon's capabilities are may be interested as well. There are details about the machine that even an experienced Atari owner will need to discover in order to begin taking advantage of this powerful computer.

1. Give Your New Bird Some Breathing RAM

The Falcon has more uses for its internal memory than any previous Atari computer, and some of those uses are quite demanding, indeed. MultiTOS, the sophisticated new multitasking operating system provided with the Falcon, permits the user to have multiple applications in RAM at the same time, and to switch between them. Four megabytes should be the minimum amount of memory considered by a Falcon owner, to allow room for MultiTOS and multiple applications.

In addition, programs which permit editing of True Color images (such as *True Paint*) allow the Falcon user to work with multiple high-res color images simultaneously, providing there is enough RAM to store them.

Another consideration is the increased speed extra RAM allows. Operations speed up considerably when frequently used files, such as *SpeedoGDOS* fonts and *SAM's* audio samples, can be kept in memory.

At present, the Falcon cannot be purchased with 14 Megs of RAM unless one has the dealer install it. Users wanting to upgrade the RAM themselves might consider buying the minimum configuration of 1 Meg of RAM and no internal hard drive, but this means that the computer won't come with all of the excellent software (at last check, the extra program disks were only available with Falcons bought with the internal drive).

Installing the RAM upgrade is not for the faint-hearted, either; for one thing, the two-year warranty is voided when the Falcon's cover is removed. For another, a piece of the upper heat shield must be cut and removed (there goes that hard-won FCC Class A approval)! And third, the top cover won't fit quite flat anymore. You can tell your friends that your computer is simply bulging with potential (grin).

This upgrade isn't cheap, either; at current discount prices, four megabyte SIMMs are about $150 each, bringing the total cost (not counting installation) up to around $700.

Rumors of less expensive upgrades have been circulating on the Internet. One, in particular, may use less expensive two megabyte SIMMs, providing a very usable eight megabyte Falcon. Perhaps, we may even see one that manages to let the cover lie flat; that would probably require soldered-in chips rather than SIMMs, though.

2. Don't Muffle Your Bird's Song

The Falcon's internal speaker may have a practical use or two, such as providing keyclicks during word processing; beyond that, it's a poor instrument to reproduce the machine's vocal range. Some users on the Internet have proudly announced popping the Falcon's top off and pulling the speaker's plug, but this is not recommended; the *General Setup CPX* is sufficient to silence it! For users wishing to take advantage of the Falcon's excellent sound processing abilities, though, a good stereo sound system is in order.

This need not cost The Earth; a pair of amplified stereo speakers with volume control can be had for anywhere from $10 to $60 these days. Even speakers without volume control can be used, if you're on a budget; the Falcon's *Sound CPX* can be used to adjust the left and right volume levels.

Besides speakers, some means of providing sound input to the Falcon is useful. Unlike other computers, the Falcon comes equipped for stereo sound input. This means that we'll either need a stereo microphone, two separate microphones[1], or some other stereo sound source to give our machine something to listen to.

Users wanting the most versatile and best sounding audio on their Falcon will go the extra distance and expand their system with a dedicated stereo amplifier or receiver. This not only provides the best possible sound (when combined with a good pair of loudspeakers), it provides audio input from a variety of sources. Just about anything you can hook up to a home stereo system can provide material for your audio creations!

Figure 1 shows an excellent way to connect a Falcon to a stereo system. It treats the Falcon just as if it were a tape deck, through the tape monitor-playback loop. Two audio adapter cables are required for this setup; they have the 1/8"

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[1] An adapter such as Radio Shack Cat. #274-375 can be used to connect two separate microphones to the Falcon.

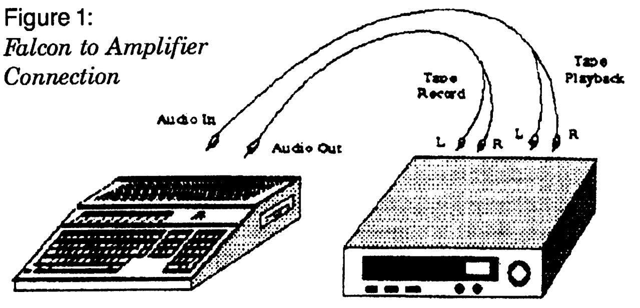

Figure 1:
Falcon to Amplifier Connection

stereo connector at the Falcon end, and a pair of RCA/Phono connectors at the amplifier end. An example cable would be Radio Shack Cat. #42-2481.[2]

Users with a MIDI device will be able to use a stereo amplifier to demonstrate a feature that only the Falcon has, right out of the box. Due to the dual-processor nature of our bird, we can not only use a sequencer to control our MIDI device; we can use the DSP chip to provide real-time audio processing to the instrument's output at the same time! Figure 2 shows how to connect your instrument to the amp. To test this arrangement, load *Audio Fun Machine* and configure it to add a neat effect to the input sound. Next, exit *AFM* so that it continues to stay resident. Then load up a sequencer, start your MIDI device playing a tune, and press "monitor" on the amp. Not too bad for a rookie machine, eh?

3. Let Your Falcon Show Its Plumage

The Falcon is designed to use two different kinds of video monitors: Atari and VGA. A third type, the multiscanning monitor, may also be connected; if so, all of the Falcon's video modes can be used. There are some obvious, and not so obvious, reasons to use each type of monitor.

A VGA display is a very good choice for those who do not already have an Atari color monitor. VGA monitors are very easy to purchase in the US, and are often heavily discounted. The VGA monitor permits the use of the Falcon's 256 color, 640x480 display mode, which is wonderfully sharp (especially for those who have had to settle for medium resolution on their previous STs for years). This display mode is selected from the Set Video menu item dialog by clicking on 256 colors, 80 columns, and double-line off. It is readable enough for most text and graphics operations, while providing a lot of interesting color.

There are a few reasons to consider maintaining compatibility with the Atari color monitor, however. For one, the Falcon's overscan mode, where the video image extends to the edges of the screen, is not available when a VGA monitor is used. This means that users who want to work with video will need to connect a television set as a second display.

Another reason to maintain Atari color monitor compatibility is for the European 50Hz video modes; only the Atari monitor supports these modes. Game software from Europe may only run in the 50Hz mode, especially that made for STs prior to the Falcon. Users of VGA monitors may, therefore, have to choose carefully when buying new programs.

On the other hand, those who stick with their trusty Atari color monitors won't be seeing the best their Falcon can display. Interlaced video in the higher resolution modes is usable only for short periods; longer than that causes serious eye strain. The Falcon is very capable of displaying the greater screen resolutions essential for modern applications. So why compromise?

A multiscanning monitor provides access to all of the Falcon's graphics modes. One need not buy several monitor adapters and switch between them, either; a Falcon universal monitor adapter is already available.[3] Those with hardware experience can assemble a monitor switch, too. Plans for its construction are available for download on various information services. For the Falcon owner with some discretionary income, the multiscanning monitor is the one to choose.

By the way, Falcon owners with an SVGA or multiscanning monitor should immediately look for *BlowUP* or *ScreenBlaster* in their favorite Atari store. These products use either software alone, or software and hardware combined to extract every pixel of resolution your monitor is capable of displaying!

4. Give Your Falcon Some Exercise

One way to convince yourself of the Falcon's talents is to get some demonstration programs that show them off. Whether you prefer to order public domain/shareware through the mail, or download it from GEnie, CompuServe, or the Internet, a variety of impressive demo programs is available and growing every week.

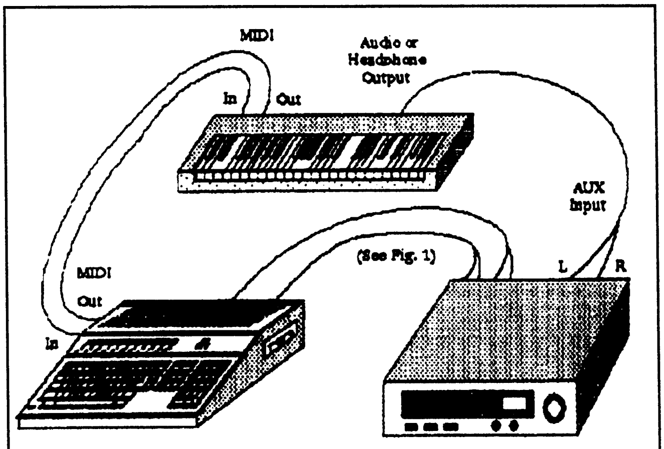

Figure 2:
Falcon/Receiver/MIDI Instrument Hookup

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[2] Some users recommend that a signal limiting cable be used for the Falcon's audio input, since it is designed to receive a weaker microphone level signal. On the other hand, the author has had no problems after two months of using the standard line level input and adjusting the input level down.

[3] Ask for the F.U.M.A. at Toad Computers; $34.95 as of this writing.

For a good, close look at the Falcon's graphics abilities, download the *Chrome Dragon* demo; it wraps bitmaps and textures around three dimensional objects and sets them spinning about on various axes, all while playing sampled muzak. The *Pentagon* demo is similar. It's composed of a series of short graphical movies that each highlight different aspects of the Falcon's repertoire.

Also worth a look are a few items collectively called the UK Demos. Two of them, *PLASMA30* and *PLASMA50*, demonstrate manipulation of a true color image to a lively sampled tune. *SPEEDER2* allows the user to use the mouse to "fly" over a bizarre landscape while the music plays. The last, *INTEL*, pokes fun at a common Intel trademark while performing some impressive color animation.

Users with VGA monitors will not be able to view some of these demos directly, since they only work in 50 Hz mode. Connecting a color TV temporarily will solve the problem.

Other free programs are beginning to show up that take advantage of various of the Falcon's abilities. *VIEWERO* is a program that uses the DSP chip to quickly convert JPEG graphic images and display them on the Falcon's screen. How about some games that show off our graphics? *LaserDemo* is a program from France that looks very promising. Users familiar with *Castle Wolfenstien* on the PC will recognize the very three dimensional graphics and mobility. This demo version has no sound, but it lets the user play a complete level of the fast paced, laser shooting game. Another game is the Falcon version of the shareware hit *OXYD*, with improved graphics and sound as compared to the ST version.

Lastly, *TERMFIN* is a popular shareware DSP program similar to *FALCD2D*, the direct-to-disk recording program provided with the Falcon. *TERMFIN* has several more features and effects than *FALCD2D*, however. It has graphical displays of the sound being digitized, and shows a valuable statistic, updated frequently: the amount of disk space remaining!

5. Devolve Your Bird With Backward Compatibility

The improvements in the Falcon's hardware and operating system were designed with running older ST software as much as possible. It's inevitable that some favorite programs won't run when upgrading to a more advanced machine, though. Fortunately, one can now download software that will allow a variety of programs to run on the Falcon that would otherwise have to be set aside.

One program, written in France but with English prompts, is called *MAGI*. It works in tandem with *MAGIBOOT.PRG*, which is run from your AUTO folder. It configures your Falcon to work much like an ST or STe with two or four megabytes of RAM. The user can select which of the Falcon's new features to disable, and then insert a disk containing the program to be run.

BACKWARD, a more elaborate compatibility program, also hails from France. Not only does *BACKWARD* provide a variety of configuration selections for making your software function, it keeps a database of how the Falcon must be configured in order to run each program you use. At present, *BACKWARD* version 2.4 is available for download as a demo; the demo version only lets the user catalog 20 different programs. The documentation is much better than that provided with *MAGI*. Version three of *BACKWARD* is nearing release, and promises to have even more useful features.

Another item helpful for making the Falcon more compatible with older ST programs is a good boot utility, such as *SuperBoot* or *XBoot*. Some programs simply will not run with *MultiTOS* or *MACCEL34*, for instance. Demo software is often very particular about what is in memory; it's best to run new demo programs on a "bare" machine (one with no auto folder programs, and perhaps only the control panel accessory loaded). Boot utilities allow the user to disable all of these memory gobblers at boot time, rather than making one reconfigure and reboot.

Some public domain software, especially games, can be finicky as well. *Graphical NetHack*, which is an excellent PD adventure game on the Falcon, refuses to run properly on the author's machine unless it is the only program in memory.

Backwards compatibility programs are a great way to keep things going when one transitions to the Falcon, and give breathing room until new software that takes advantage of the machine is available. With added compatibility, those of us who used to own STs need not get rid of all of our valuable software.

6. External Hard Disk? Get the ICD Pro Utilities

While not essential, the ICD "Pro" version of their hard disk utilities gives the Falcon important drive accessing capabilities. This is particularly true if the user has previously used his or her hard disk(s) with the ICD host adapter for the Atari ST product line.

The AHDI hard disk driver for the Atari is rather limited. For one thing, it will only permit the user to have four partitions per drive. This means that if a user connects an ICD formatted hard disk with ten partitions to a standard Falcon, only the first four hard disk partitions will be available!

Not only will the ICD Pro driver permit more than four partitions, it adds a slew of conveniences lacking in the spartan AHDI product. The ICD driver permits caching of both reads and writes for speedier drive access; it also will increase the RAM assigned to keeping track of hard disk folders as high as one likes. Using *ICD Pro*, you can configure your Falcon to boot off of a different hard disk partition each time you boot your bird; simply hold down the key corresponding to the disk partition at boot time.

If you have a large hard disk and want to format more than the 14 disk partitions GEM allows,[4] put an icon for ICD's DESKTOP.PRG on your Falcon's desktop. This nifty program will reread and reassign your disk partitions without a reboot, letting you select which drive partition to assign to each icon. ICD also provides a CPX that will reread the disk partitions

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[4] MultiTOS increases the number of available drive icons out to the letter 'Z,' allowing 10 more partition.

(very useful for SyQuest owners), and displays a list of all of the ‹Sense #› errors and what they mean.

The product could still use a little polish; for instance, the printed documentation is outdated. It's the same book that's been provided with the ICD host adapter for years. All of the Falcon specific information is provided on an assortment of diskfiles, such as WHATS.NEW, README and ADSCSI.DOC. Often it refers to the TT030 where it means the Falcon030 as well. In addition, the author could not get the disk drive parking program to work with any of three different hard drives. Another minor problem: in the ADSCSI CPX, some of the button labels are given in German.

To compensate, *ICD CleanUp* has been included as a bonus; this program is a valuable tool for recovering glitched files and drives. There is also a driver for CD-ROM drives included! For $49.95, a Falcon owner can get the most out of his or her hard disks with this great set of utilities.

7. Shake Wings With SAM

The Falcon's *System Audio Manager*, or *SAM*, will come as no surprise to those familiar with the Macintosh. Atari has done a few things even better though; *SAM* allows the use of stereo sound samples. Using two microphones as described above, the user can create sounds that travel between both speakers. *SAM* not only uses .AVR files, it uses .WAV files, too, the same audio sample format used by *Microsoft Windows*. This means that any well-stocked BBS should have plenty of sound samples available for download!

The *SAMCNFIG* accessory has a variety of useful features. One can select the different sounds caused by several system activities and assigned key groupings. One can create new key groupings, and decide which programs can be *SAM* "aware" (or permit *SAM* sounds to be heard while in use). *AtariWorks* is a good example.

The sound editor in *SAM* allows the user to cut and paste existing sounds to create sounds, as well as record new ones. If *AFM* has been run and left "active," the DSP can be used to add an effect (such as reverb) to the newly recorded sound, too!

There are a few bugs in *SAM* to deal with, however. One is that if a Startup Sound is selected, it will bellow from the Falcon's little two inch speaker with explosive might when the Falcon boots up. This is because the internal speaker comes alive with full volume set, and its volume is not lowered until the extensible control panel is loaded later on, after *SAM*.

There are a few solutions to this annoyance; the easiest is not to select a startup sound to begin with. The second easiest is to download a program that disables the internal speaker at boot time and put it in the auto folder; some Falcon startup utilities that permit this have started to appear on information services. The third method is to disconnect the internal speaker; again, this is not recommended.

Note that the net result, in each case, is that there is no startup sound. Sigh. Perhaps a better solution will come along.

Another *SAM* oddity is the *SAM__SET.CPX*; according to the manual, this CPX is supposed to provide the same features as *SAMCNFIG.ACC*. While *SAM__SET.CPX* came installed in the author's CPX folder, it does not show up in the extensible control panel.

What, then, does this CPX file do? The answer is "nothing, yet." A careful look shows that this file is barely over 1K in length, and contains little besides the Atari character set in its data. It appears to be a space holder until the genuine article comes along.

Regardless of these quibbles, *SAM* is great fun, and the samples sound quite impressive. It will keep most users smiling during an afternoon's plinking at the keyboard.

8. Dust Off Those Owner's Manuals and Give Them a Second Look

The Falcon ships with an impressive array of nicely rendered documentation. Since Atari's gone to the trouble, it's worth the time to go through the books and find out which features of the operating system and provided applications are less than obvious.

For example, did you know that pressing the "Help" key with *MultiTOS* running brings up a Help Menu with *MultiTOS* features listed? Another fact the documentation reveals is that it's possible to create an icon for the printer and leave it sitting on the desktop; any text file dragged and dropped into this icon causes it to be sent to the printer.

The documentation also discusses the new features in the Install Application dialog, one of which permits the application to be executed at the press of a function key. Up to 20 function keys can be used to execute different programs.

Users familiar with TOS 1.4 and older will have plenty to discover about the new desktop. Digging into the manual and testing the many new functions is the fastest way to learn.

9. Forgive Your Hatchling Its Mistakes

Any brand new computer in its first release is going to bear some rough edges. The Falcon is no exception. With as many great new features and software elements, it's amazing just how well it all holds together.

Still, there are a few noticeable things that don't work as expected. It's fortunate that they're all relatively minor.

One example given already is the *SAM* configuration CPX, a "virtual" program. The *SAM* documentation also states that, at present, the volume control for the left channel in the *SAM* sample recorder changes the volume on both channels; at least this bug is admitted. This problem stems from the operating system level, and it's hoped that it will be fixed eventually.

The help screens under *MultiTOS* claim that one can use a key combination to select each of six different video resolutions. This doesn't work, but it would be very useful if it did!

The documentation for the *Mouse Accelerator* describes a screen saver function, which can be activated. While the *Accelerator CPX* does have the button for this feature, the screen saver never takes affect.

Also in the documentation, the HDX instructions claim that there is a menu selection that allows the user to park a hard drive. This selection is not present, even though it existed in previous versions of the software. [Could there be some part of the Falcon's design that conspires to keep hard drives from parking? One has to wonder.]

Another oddity of the manual is that it completely lacks all description of the Falcon's Video Mode selections; it's as if there were no "Set Video" menu item at all! Coming from TOS 1.4, I was very interested in finding out which video selections provided which resolutions. Fortunately for me, previous articles in *CN* have covered this in detail.

Compared with all that the Falcon is capable of, these minor problems are easy to ignore. Even if Atari doesn't release another upgrade, it's worth the minor inconvenience. There is evidence that the state of the art continues to evolve. On the Internet, there already is a new version of *MultiTOS* being tested, so progress continues.

10. Introduce Your Falcon to New Friends via Online Services

Communication with the widely dispersed Falcon community is an excellent way to keep your young Falcon from getting lonely for its own kind. Not only does it provide you with access to new public domain programs and demos; it provides a means for getting answers to questions that no one in your local community may be able to answer. BBSs, GEnie, and CompuServe are open 24 hours a day, unlike your nearest Atari dealer. These services also provide continuous news of new developments and releases.

Information services can also provide one with the means of getting online, too, since some excellent shareware terminal programs are becoming available. Two shareware programs are available for download that work particularly well with the Falcon: *ConNect* and *Storm*.

ConNect is an excellent shareware program from Germany. While the original versions were in German, the more recent ones provide English resource files, too. This program has far too many great features to go into here, but it's well worth paying the shareware fee.

Just a couple from the list: If you have a high speed modem, you can set your Falcon's serial port up to 57,400 KBaud and maximize your communications speed. You get a continuously updated display of your online time and amount spent (for pay services), and can use a variety of fonts and window lengths while online.

Storm places second for useful features, but may be catching up. Like *ConNect*, it works in all of the Falcon's higher resolution modes. It has an un-resizeable window depth of 24 lines in its present incarnation (1.02).

Storm will automatically begin a download for you, once you've configured the right way to download it. Unlike *ConNect*, *Storm* has a resizeable and editable capture buffer. While it does perform zmodem downloading well, it lacks a feature I value in *ConNect*: if you become disconnected during a large download, *ConNect* provides the option of continuing where you left off when you try downloading it again. *Storm* would have to overwrite the file and download from the beginning.

Access to the Internet is strongly recommended to those considering programming the Falcon. Much of the more advanced software for Atari computers comes from Europe, and the Internet is a convenient way to keep up with the state of the art. Two newsgroups in particular should be watched: comp.sys.atari.st, and comp.sys.atari.st.tech. If you attempt to write a Falcon program and run into trouble, never be afraid to post a question on the Internet. There are some very knowledgeable people out there.

11. Seriously Consider Training Your Falcon by Writing a Program or Two

An eleventh item? Just as the Falcon often surprises its owner with one more unexpected feature, an extra item begged to be included in this list.

As a parting suggestion, this Falcon enthusiast recommends that any Falcon owners who have considered programming a computer in the past, take some time and seriously give some thought to writing software for the Falcon.

Not only do we in the Falcon community need more software development, our current situation makes professional software development within reach of every Falcon owner!

What's different now than back when the Atari first became available? For one thing, high-quality documentation is easy to get.

Early ST developers had to buy the Atari developer's kit for $300 to obtain a rag-tag pile of unindexed notes on how to code the machine. Today, for a mere $40, The Atari Compendium may be had. This hefty book can only be described as outstanding!

All parts of each version of the ST are described in very readable detail: the hardware, the various levels of the operating system, the assembly and C versions of every programmable function. Pitfalls and caveats are frankly disclosed as well, saving reams of debugging time.

What else makes programming the Falcon reasonable? How about one of the best C compilers and development systems, free for the time it takes to download it? *GNU C*, specifically, from the Free Software Foundation, is well supported online, and being updated and improved continuously. The GNU system compiles and links C++, C language, and assembly for tight, efficient programs.

This system does come with a fairly stiff learning curve, though; it was written originally for people who knew how to develop C under Unix, and ported to the ST line of computers later. There are several megabytes worth of tools for the Unix-aware programmer that run flawlessly under *MultiTOS* and *MINIWIN*. One can even format a hard disk partition as a MINIX partition, providing full-length filenames with lowercase letters.

For those who'd rather stay in the GEM environment and can afford the price, *Pure C* and *Lattice C* are excellent systems that provide a friendlier and more intuitive working environment. Before purchasing one of these commercial development systems, though, make sure it supports the new Falcon system calls. Updates may be available from the distributor for those with older software versions.

The capabilities within reach of the Falcon are amazingly large. A quick glance at the machine's architecture inspires several ideas for new programs. First, there's that 32 MHz DSP chip sitting in there, idle nearly all of the time. How about a file archiving utility that uses the DSP to compress and extract files? That would make an impressively speedy utility! The LAN port is sitting idle as well. ST owners have written PD and shareware MIDI LAN programs already–how about souping up one of those to use the LocalTalk compatible LAN port? 100 KHz using simple phone cables! What a great way to network a home office.

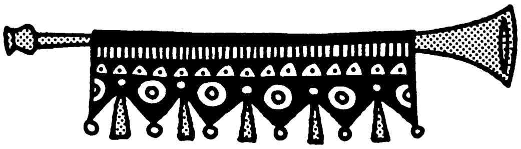
Programming may not be everyone's idea of a great way to spend idle hours, but for those who are inclined, the Falcon is a real treat to work with!

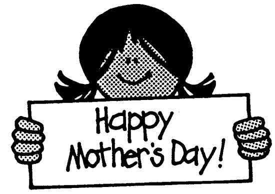
In Closing

The suggestions given here are the result of just a few short months of working with the Falcon030. They are not intended to be comprehensive in any way; one of the finest things about computing is that it is infinitely adaptable, and the Falcon takes it a bit further still. The discoveries and recommendations of other Falcon users are welcomed and encouraged! It's easy to see that there aren't a whole lot of us. This makes it all the more important that each pitches in his or her share.

About The Author

Scott Chilcote is a computer engineer who makes his living in the dynamic employment market of Northern Virginia. He has a colorful history with the Atari ST, including forming and presiding over a small ST Club, selling the machines for two years at an Atari store in Norfolk, Virginia, and running an Atari ST SIG on a prosperous multiline BBS.





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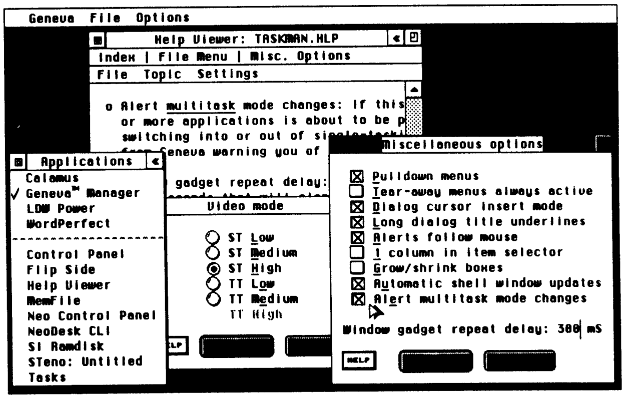

o Alert multitask mode changes: If this
or more applications is about to be p
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Geneva warning you of
gadget repeat delay:

Video mode: ○ ST Low ○ ST Medium ● ST High ○ TT Low ○ TT Medium TT High

Miscellaneous options
☒ Pulldown menus
☐ Tear-away menus always active
☒ Dialog cursor insert mode
☒ Long dialog title underlines
☒ Alerts follow mouse
☐ 1 column in item selector
☐ Grow/shrink boxes
☒ Automatic shell window updates
☒ Alert multitask mode changes
Window gadget repeat delay: 300 mS

The included Task Manager sets all of GENEVA's options and it's unique "program flags", which specify how to run most programs, even those not designed to multitask.

Geneva is $69.95 and uses less than 200K of memory. We recommend 2 megs or more for best performance. A desktop is not included or required, though we recommend NeoDesk 4.

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CD-ROM and the Atari:

A Coming of Age

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The Concept

The idea of a CD-ROM drive for an Atari ST is simple enough. SCSI based CD-ROM drives have existed for years, and for years it's been possible to attach SCSI devices to Atari computers using either a host adapter (like the ICD Link or AdSCSI), or directly through a SCSI port (in the case of the TT030 and Falcon 030). Atari announced a CD-ROM drive for the ST at the time of the introduction of the ST—at Winter CES in January of 1985. That drive was released only in limited numbers and never really saw the light of day until 1988 or 1989. But why has it taken so long for third party developers to pick up the ball on this seemingly obvious peripheral for the ST?

Again, the physical concept is simple. A CD-ROM contains data, just like a hard drive. And lots of it. It's even simpler than a hard drive for a computer to work with because it's a read-only device. The computer doesn't need to maintain a file allocation table (FAT—it tells the operating system where on a disk new data can be written). And talking to a SCSI CD-ROM drive with an Atari is simple—just plug it in and start sending commands.

The Software

Data on CD-ROMs are almost always encoded into one of four different formats: High Sierra, ISO 9660, Mac HFS, or Photo CD. I will take a moment to say something about each of these.

Most CD-ROMs are in High Sierra or ISO 9660 format. These are very similar, device independent formats. They allow for the storage of over 600 megabutes (MB) of data on a CD-ROM. They are single-session formats, meaning that they have only one directory. These formats do not have a file allocation table (because there is no need for them on a read-only device) and they support file names longer than the standard eight dot three convention. As such, they are substantially different from the TOS/DOS format and you will require a special driver to read them on your Atari.

Macintosh CD-ROMs are usually encoded in the Mac HFS format—hierarchical file structure—that Dave Small knows and loves so well. This format mimics the Macintosh hard disk structure and can, thus, be read with little interpretation by a driver when used on a Macintosh. As of this time, little effort has been made to make the HFS format readable on the Atari or on the PC (except for when it is used by Mac software under Spectre GCR and MegaTalk). The HFS CD-ROM format is something that you want to know exists but not something you will, as a rule, be able to use or will come into contact with unless you have a Macintosh.

Photo CD is a format that was developed by Kodak specifically for use with write-once user-writable CD-ROM disks and their Photo CD development process. For those of you who are unfamiliar with the Photo CD process, it goes like this. Take your film to Wal-Mart. Tell them you want it developed onto CD-ROM (it costs about $1.00 per picture for the first roll). They send off your film. The film negatives are conventionally developed. Then, the negative (or perhaps a positive slide produced from the negative) is placed into a high resolution slide scanner and scanned, using a computer. The computer then scales the photo into a few different sizes and resolutions and writes all of the data to the write-once CD-ROM. This is done for each picture on the roll. Then a directory is written onto the disk, specifying a numerical file name for each picture. The whole thing is then sealed up and sent back to you and you pick it up. It's your first Photo CD.

Later on, you want to get more pictures developed on Photo CD. Well, there's still space on the first one (each disk can hold over 100 pictures). So, you take your Photo CD back and say, "Put these new pictures onto this Photo CD." They send away your film and your CD, just like before. But this time, they start writing at the end of your previous Photo CD "session" and they also write a second directory, to index the new pictures. Why write a second directory? Well, there was no way to change the first one. This thing is write-only. So they have a second directory. If you go through this again and again, you can end up with three, four, five, six, or 10+ different directories. How do you handle this? You need to have a CD-ROM drive and driver software that is comfortable with the notion of having more than one directory. Such things are known as "multisession" compatible, and so erupted the craze for multisession compliant stuff when Photo CD was released.

So, obviously, these various formats each have their peculiarities. And, needless to say, they are quite different from the MS-DOS disk structure that the Atari and the PC use. So right away we got a problem—how do we read disks that are in a format we can't understand?

In the case of the Atari, we sit around for a few years and do nothing. Then, when we are sufficiently moved, we write a driver program to "interpret" these CD-ROM formats and feed 'em to TOS, making them look as if they were a regular TOS/DOS hard disk. The program that Atari first put forth to do this was (and sadly still is) called MetaDOS. MetaDOS installs as a TSR device driver and will create a drive letter (assignable) that will contain the contents of any HS or ISO formatted CD ROM. So isn't this all we need to get started?

If MetaDOS worked with every Atari computer, every SCSI interface, every CD ROM drive, and also every CD format (including Photo CD), the story would be over; you'd be finished reading, I would be done writing and I would be working on the Toad catalog like I should be. But alas, things just aren't that simple, and you're going to have to stick around to find out what happens.

It turns out that MetaDOS has, thus far, been made to work with the HS and ISO formats, but not Photo CD. The newest version of MetaDOS (2.2) will work with every Atari computer, but not every CD-ROM drive. Furthermore, there are several different physical BOS (basic operating system) device drivers for MetaDOS that work with different drives, and even one specifically for ICD host adapters. It is quite a muddle.

MultiTOS

MultiTOS is capable of supporting what it calls eXtensible File Systems, and they are defined by—you guessed it—drivers that are known as .XFS drivers. One obvious use for an alternate file system driver would be for CD-ROM, and these work by creating an OS-level filter that converts CD-ROM directory data into TOS compatible directory data. This is the same job that MetaDOS was doing, but it is done on a more grass-roots level and is a far more elegant design. You'll see why when we discuss the process of configuring MetaDOS.

As of this writing, I know of three .XFS drivers for MultiTOS. One was released by Atari early last year and works with HS and ISO formats. The other was released by Atari in the middle part of last year and works with HS, ISO, and Photo CD formats. Lastly, ICD has released an XFS driver for use with its host adapters and, as far as I know, it supports only the HS and ISO formats. The first two I mentioned work on only the Falcon and TT030.

XFS drivers work pretty well. They do a competent job of reading the disk and getting the data through. The biggest problem you'll encounter with the XFS driver is the overhead (in both speed and memory) incurred by running MultiTOS. MultiTOS can eat up 1MB or more of memory and can make your machine run noticeably slower. You will find yourself wanting to find another alternative—even if it's just for the sake of not feeling trapped by these constraints.

ExtenDOS

ExtenDOS is a product of Anodyne Software and the labor of Roger Burrows, a fine Canadian. Roger has done some major work to try to get more CD-ROM compatibility on the Atari. ExtenDOS works almost identically to MetaDOS, but includes support for more drives and may soon work with PhotoCD and Mac HFS formats. ExtenDOS is the route to go if you've tried everything else. It is also a good alternative for users who want to access HS/ISO disks without incurring the wrath of MultiTOS.

Keep an eye out for more developments regarding ExtenDOS. It has the opportunity to become the defacto standard for CD ROM on the Atari.

While Anyone Can See Chinese, Few Can Read It

Now that we have established that you can use MetaDOS, XFS Drivers, or ExtenDOS to get CD-ROM data onto your Atari, we have to ask ourselves questions about the data itself and what we intend to do with it.

We get calls all day long from people who want to know if they can run *Microsoft Encarta* (or similar popular products) on their Atari if they buy one of our CD-ROM drives. The answer is no, or at least a qualified not–right–now. CD-ROM is but a medium for storing data. There is no reason why that data can't be programs written for PC-compatibles, and in the case of *Encarta*, that happens to be the situation. There is a program written for *Windows* stored on that CD-ROM, and for exactly the same reason that you can't run *Ami-Pro for Windows* on your ST, you can't run the *Windows* front end for *Encarta*. The code is not compatible.

However, CD-ROMs are a varied lot. There are disks full of clip art, PostScript fonts, GIF files, JPEG pictures, WAV soundclips (which are directly compatible with *System Audio Manager* on the Falcon) and even disks that contain organized "multimedia" presentations that can be run from a variety of platforms. In addition, there are now CD-ROMs with Atari specific data on them. It's about time.

The first Atari CD-ROM that I am aware of was actually produced in conjunction with *Current Notes* by the guy who used to own the store Computer Rock in San Francisco. It contained several hundred megabytes of PD library programs and was produced in 1988 or 1989, before the introduction of the Atari CDAR504 drive. Subsequently, this disk was never really distributed in any quantity and the stuff aged like moldy cheese before it had a chance to reach more than a few people. I feel lucky to have a copy.

There have been a couple of disks compiled in Germany, but I know of this only through reading about them. I have not seen them and suspect that they contain German-language programs only.

And, of course, just a couple of months ago, Eric Tremblay and Rene Guimont (two other fine Canadians) released the *GEMini Atari CD-ROM* (published by Walnut Creek CD-ROM, a major CD-ROM publisher), a $29 product with over 600 MB of programs, pictures, games, and other files on it. Much of it was compiled from Genie and from sites on the Internet. It is quite the collection of software, and it bears much of the responsibility for the recent surge of interest in CD-ROM among Atarians. The other reason for increased interest in CD-ROM has been Greg Kopchak's tireless promotion of his *PhotoShow* program. It allows Falcon users access to Photo CD images and is quite a fun tool!

Greg (his company is called It's All Relative) has also been pursuing many other CD-ROM related projects, including working with Damien Jones and Roger Burrows to improve and enhance *ExtenDOS* and working with German developers to find CD-ROM's that would be compatible with the Atari. He has also correctly pointed out that Corel's *Professional Photo* series Photo CD disks are usable with the Atari. Look for more to come from him. He's got a lot of drive (pun intended).

Brian Grier (a North Carolinian) has been working on getting the *Compton's CD-ROMs* to work with the Atari. These CD's were intended to be platform-generic and Brian has come a long way in figuring out how these things are laid out. Again, a CD-ROM encyclopedia is nothing more than a driver program that knows where to locate and how to display or play picture or sound data that is written on the CD-ROM. All that is necessary to take advantage of this data is a program that emulates the PC or Mac front end. Then, suddenly, you have Atari-compatible CD-ROMs! There are others working on similar projects and I am sure that this will be something we will see developed. Keep your eyes open.

As for audio CD's (gee, wasn't that the reason these things were originally developed?), most CD-ROM drives accept a standard set of commands for playing audio, and people have written several programs that will play CD's beautifully. Look on the online services (or on our Toad BBS) and you can find programs that will do this.

Furthermore, it would seem to me that if one had sufficient information, it would be possible to use a CD-ROM drive to actually read audio data from a standard audio CD. Why use a CD player to convert this digital data into analog signals and then use a Falcon to re-sample them back into digital data when you could just read the data directly? I think we'll hear more on this topic—even if it's just an explanation of why it can't be done easily. But certainly it is theoretically possible.

The Hardware

Over the past two or three years we have seen a progression in CD-ROM technology. What had been standard for years was known as "single-speed" technology and it involved an access time of about 600 ms and a sustained throughput (or data transfer rate) of about 150K per second. Access time is the average amount of time required for the drive to send its laser from where it is to where it needs to be to read the data you have requested. Sustained throughput is the rate at which data can be transferred from the drive into your computer's memory. A typical Atari hard drive these days has a throughput of about one MB per second, so you can see that 150K per second is a little slow.

The drives progressed, first improving access time to the point where it was under 400ms. Then NEC introduced its "double-spin" drives, pushing the standard for throughput up to 300K per second and pushing access time to about 350ms. These double-speed drives, as a rule, tended to be Photo CD compatible and were, thus, popularly known as "multi-spin" (denoting the double-spin 300K/s data rate) and "multi-session." This was, and remains, a popular standard.

A few months ago, NEC released its 3x series of triple-speed drives (3xp is portable, 3xi is internal, and 3xe is an external unit that is slightly faster than the 3xp). They support a sustained throughput of 450K per second and have access times under 300ms. NEC also recently released a 4x quadruple speed drive that gets speeds of 600K per second.

It is up to you to decide what level of performance is best for you. I have found single speed drives to be sufficient for many applications, while the sexiness of a double or triple speed drive is hard to resist. I think it's safe to say that the NEC 4x drive is, for now, overkill at $1,000. But still, it's nice to know it's there if you need it, huh?

Hardware Compatibility

There are bunches of different manufacturers and varieties of SCSI CD-ROM drives and they all have their quirks. Also, be warned. If you intend to buy a CD-ROM drive, make sure it is an SCSI drive and not an IDE/AT interface type. SCSI drives are more expensive, but they tend to be more robust. They will work on Atari's, PC's, and Macs, and can be mounted internally or externally in various cases.

Excepting the obvious choices about speed (in the form of sustained throughput and access time), you need to be aware of a couple of pitfalls. Many CD-ROMs are not compatible with various ST host adapters (like the ICD Link) because they insist on using parity checking. (Parity checking is the system where a ninth bit is added to an eight bit data bus to give a means for error detection and correction.) The ICD Link, as it stands now, is not compatible with parity checking. The typical solution for this is to turn off parity on the drive. However, with some drives (like the NEC 2x and 3x drives) this is not possible. ICD will be releasing a parity-compatible Link soon and this will provide one solution. The other solution is to attach the drive to a Falcon, TT030, or ICD AdSCSI+ host adapter, all of which do not care about parity.

Furthermore, the ICD Link requires that the drive provide termination power on its SCSI port through pin 26. Many drives do this, but some do not. If they don't, the Link won't have any power (unless it's able to grab it from another drive on your SCSI bus) and you won't be able to use the drive. Sometimes this can be cured by sticking a fuse and a diode onto that pin, internal to the drive, and connecting it to five volts. (The diode is to prevent backflow of current into the drive and the fuse is to prevent damage to the drive or cabling should the pin get shorted out. On the old Adaptec 4000 controllers, which had no fuse on this line, if you plugged in a SCSI cable backwards—which has the effect of tying the termination power line to ground—your SCSI cable would burst into flames, right down the center. To really look cool, accidentally demonstrate this technique at a user group meeting when setting up a hard drive.)

Be conscious of physical connectors. Most CD ROM drives use 50-pin centronics female style SCSI connectors (the same kind used on the back of our Toad Stealth drives and on most SCSI devices). However, as you have seen with the Falcon, the trend is towards using the miniature SCSI-II connector, and NEC has done this with the 3x series drives. So, if you want to run one of these drives with something like the Link host adapter, you'll need to get some cabling to adapt down to the smaller size. Also, be aware of termination. As usual, the last device on your SCSI chain needs to be terminated. This makes sure the signal is absorbed at the end of the chain and doesn't "ring" in the wires, which causes false signals. Some hard drives have termination installed internally. Others require you to use external SCSI terminators. Most CD-ROM drives have some sort of provision for termination provided in the form of a dip switch setting. If you put the CD-ROM drive last in the chain, you should turn on its termination switch.

Configuring the Software

Once you get your CD-ROM drive connected properly, you need to tell your computer that it's there. As we have said, this is done using *MetaDOS*, a *MultiTOS XFS* driver, or *ExtenDOS*. We'll take a brief look at how all three of these are configured.

MetaDOS and ExtenDOS

As I said, these two are close cousins and are configured almost identically. The process goes like this:

1. *MetaDOS / ExtenDOS* is placed in Auto Folder.
2. Upon loading, *MetaDOS / ExtenDOS* reads an ASCII file (placed in the AUTO folder) called CONFIG.SYS or EXTENDOS.CNF, which specifies a physical device driver and file structure drivers.
3. The physical device driver is loaded. This driver tells your computer how to talk to your CD-ROM hardware. These drivers end with a .BOS extension.
4. File structure drivers are loaded. These drivers usually end with a .DOS and connect a particular file structure with a drive letter and a physical CD-ROM drive. You might specify that the High Sierra format would be handled by drive L, while the ISO format would be handled by drive M and Photo CD format would be handled by drive N. These would appear as icons on your desktop (you need to "install" them from the desktop). Unlike *MetaDOS*, *ExtenDOS* has one file structure driver and subsequently one drive icon that handles both High Sierra and ISO formats. (As I said, Photo CD may be coming soon.)

MultiTOS XFS Drivers

There are two different XFS drivers, one from Atari and the other from ICD. The Atari driver is called CDROMdn.XFS, where d is the drive icon letter and n is the SCSI ID of the drive. The Atari driver works only with Falcons and TT030's. The ICD driver is called ICDCDdn.XFS where d and n have the same meaning. This driver will work with ICD host adapters and MultiTOS.

After you have properly named these files to reflect the icon and drive ID you want to use, place them in the root directory of the drive from which you boot MultiTOS. MultiTOS will see them on boot up and will install these file systems. Unlike MetaDOS, one icon handles High Sierra, ISO and Photo CD formats. However, the ICD driver is not Photo CD Compatible. (Ugh!)

Is There Anything Else You Need to Know?

This is pretty much the state of affairs for CD ROM on the Atari right now. Things are developing and changing, and as minimums go down for CD ROM production, more and more companies will be producing Atari specific CD-ROM's. Late breaking word has it that the Sterling Connection, the company that has produced the Templicity, Qwikforms, EP-Salot, Cliptomania, and FontFarm packages will be producing a CD ROM with a lot of that kind of stuff on it. More will follow and prices will drop, too.

I must say that we at Toad Computers are selling more CD-ROM's than ever before, mostly because applications are finally beginning to appear. Plus, CD-ROM, in general, is becoming more popular worldwide. In addition, many people are buying drives to use on multiple platforms.

Don't be discouraged by the seeming complexity of stuff like MetaDOS, either. It's not bad once you get it set up. Also, don't think that PC users don't have to put up with the same stuff. With DOS (and Windows), you have to add a line to load the MSCDEX driver to your CONFIG.SYS file, which takes up conventional memory unless you use a memory manager to load it high, if you have free upper memory. MSCDEX does the same job that MetaDOS and ExtenDOS do—it maps the High Sierra and ISO CD formats into a standard DOS directory structure, and it's just as much work to set up.

But again, do take the time to set it up because the rewards are enormous. There are new things being released on CD every day and it's well worth your time to investigate the bounty of information that's available. Best of luck! Feel free to send your CD ROM related questions to me here. I'd be more than happy to answer them in the column.

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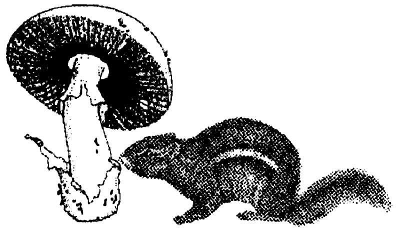


Why Calamus SL?

or My Attempt to Marry a Piece of Software

Running Out of Ram by David Barkin

This column has, by and large, been devoted to users of graphics and desk-top publishing programs. Most of these articles have assumed that the reader is already familiar with the programs mentioned. Thus, my audience of devoted readers (my mother, father and George, the neighborhood crack addict) are always picking up new and innovative ways to make progress with high-end graphics. From time to time, I write glowing reports of product updates. These updates are *not* meant for the advanced user; they're meant for everyone, and the purpose is to get more people enthusiastic over the stunning capabilities that are available. Recently, I've received a number of letters from people, telling me how useful my articles have been.

"Thank you for your articles about never, never land. Some day I'll own a Cray Super Computer and will learn about these things," they tell me.

Instead of wanting to learn about *Calamus SL* they now turn to *Print Shop;* instead of *Retouche,* or even *Studio Photo,* they remain convinced that *Neochrome* is about all they can learn to use.

What is the cause of this problem in communication? Naturally, the first thing to do is punish the dog. This whole approach to writing was his idea. But the most important lesson is never assume the reader knows what you're talking about. It's very well and good to write advanced tutorials, but when you're writing for a general audience, the only thing you should assume is that someone is reading the article. Indeed, this has always been my biggest gripe about the authors of program manuals. This first rule should be carved out in granite. If the reader (user) doesn't know what you're saying, it's your fault! In this case, of course, it's the dog's fault and I want you all to know that he has been suitably chastised.

This mia culpa out of the way, this article is partly a tutorial, in the sense of giving users the *correct approach* to using the program, and partly an explanation of why the expensive price of Calamus masks what is actually a bargain.

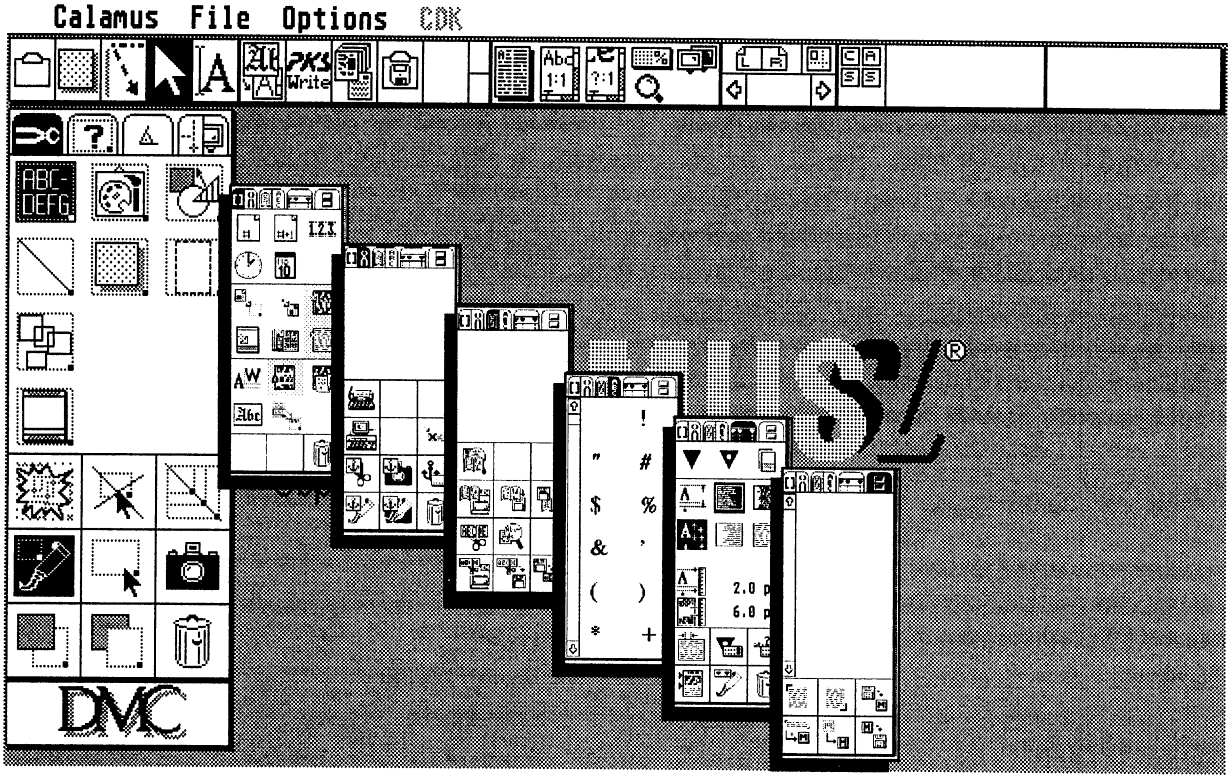


Figure 1. Let's try to keep this as intimidating as possible. If more people learn how easy this program is, I'll be forced to give up my feelings of superiority. This is my opening screen of *Calamus SL* Onto this screen I've pasted the icons from just the *Text Editor Module*. The rather surprising thing about all of these icons is that you only need to use a handful of them, that the whole system is a tutorial, and that there is nothing you can't do with *Calamus*.

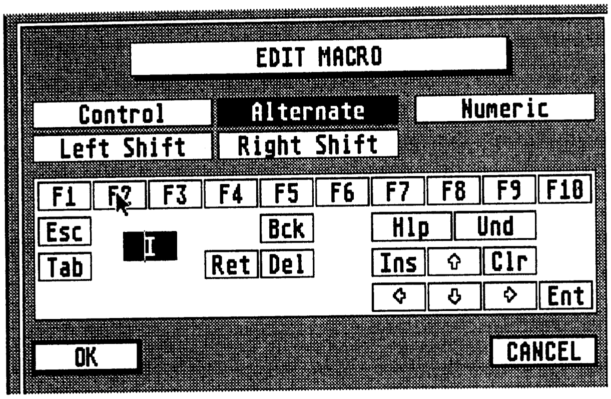


Figure 2. The possible key choices for your macro recorder. You can select just about any combination you want for any of your created macros and *change them any time you want.*

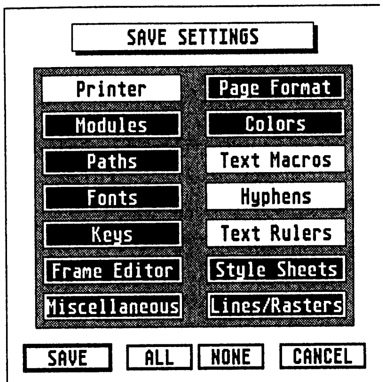


Figure 3. Saving the various parameters of SL. Notice that you can save just the parameters you want to, and this can be done at any time.

Thus, this re-visit to *Calamus SL,* or why spend $600 to do Desktop Publishing?

Introducing Calamus SL

Calamus SL is a *professional* solution to Desktop Publishing. This intimidating sentence implies that it is a *difficult* solution to Desktop Publishing. Such is not the case. The interface consists of hundreds of icons. These icons form short trees, one layer deep. You hit one icon for text and, lo and behold, a new slew of icons is revealed. These new icons, in turn, often have dialog boxes. Select, for instance, the line icon, and more settings open up. If you have only seen this interface, or read about this approach, it sounds cumbersome, fearsome, dismaying. But this is an illusion. The entire interface is actually meant as a learning tool. A professional approach to Desktop Publishing simply cannot be done with just drop down menus and a number of dialog boxes. DMC, the authors and distributors of this program, have taken a unique road to solve the problem of packing thousands of options into a usable package. ***It's not necessary to master the program in order to get professional results!*** The entire icon interface is a gigantic teaching tool. An incredibly well-designed tutorial built into the program. In fact, you can make professional use of the program while actually knowing only a small percentage of its capabilities. You can learn to use the various options, more or less, as you go along. You can also ***customize the program, at your own speed, as you go along!***

Before I go into an explanation of how this is accomplished, I want to give an overview of what your $600 investment gives you and what you need to run it.

An ST/TT/Falcon with a minimum of two and a half megs of memory, preferably four megs. It's actually possible to run *SL* with just one floppy drive, but a hard drive should be considered a necessity. The reason it's *even possible* to run it off one floppy is that the entire program loads into memory. There is no attempt to access your disk with every change of feature. You need a monitor capable of ST high resolution (640 x 400). *SL* will run on any currently available graphic card at any screen resolution the card is capable of and with 16.7 million colors on most cards.

DMC has taken a modular approach in creating *SL.* This word "modular" is confusing in and of itself. High level programs are becoming BIG. Computer code is starting to assume the dimensions of Star Wars. Tracking down bugs becomes a project in quantum mechanics with a touch of recombinant DNA chemistry thrown in as a diversion. DMC's solution was to create a shell. This shell is the basic *Calamus SL* program. The *"modules"* are actually the functioning parts of the program. To write text requires a module, to draw lines requires a module, and so on. But from the user's point of view, the word *"module"* is meaningless. When a module is loaded it happily and seamlessly integrates into the program. Once loaded, there is ***no*** difference between using a module or a facet of the program that is built in. Which modules get loaded are defined by the user in an easy set-up dialog. Once modules are defined, the program automatically loads these modules. If you want to use additional modules, they can be loaded at any time. Deleting unused modules, in turn, frees memory that the unused module might be hogging. This system is a dramatic breakthrough in computer programming. It allows *SL* unlimited expansion capability *without* slowing the program to a crawl. It's also not necessary to update your program just because a new capability can be added.

Standard Modules

The standard modules that come with the package include modules for creating *Frames, Lines, Rasters* (little squares, rectangles circles, ovals, etc), *Text Editor, Text Effects, Raster Generator* (this module allows you to manipulate the way your printer, or your service bureau's printer, aligns the dots that your page is composed of), *Clipboard* (for cutting and pasting frames between pages or documents), and *PSK Write*, a word processing module. There are quite a few other standard modules but their functions are more obscure, although there will come a time when you appreciate them. More on them later. At the end of this article I will talk about the optional modules, but this article is devoted to what you get with the basic package.

In addition to the modules are the import/export drivers, for importing text, graphics, and the printer drivers. These drivers are actually mini-modules. You can define which drivers are loaded when you run the program. If your printer is an HP Laser Jet, why have drivers for Canon Bubble Jets loaded? Once again, this a memory saving solution. The import graphic drivers include just about every Atari and cross platform format available. IMG, PI?, GIF, TIF, HPGL, Targa, etc. As with the case of the regular modules, as new drivers become available, you can include them; there is no need to wait for the entire program to be updated.

The above is the basic *SL* package. With just the included modules and drivers, you can create Life magazine. This is awesome power for a personal computer. What about the point of view of someone without the same delusions of grandeur that plague my household (I, the great publishing magnate, and my dog, Rin Tin Tin). You should ask yourself the very interesting question of whether time is money, or at least value? This page, on my HP IV, took 33 seconds to print at 600 DPI and 12 seconds in the draft mode of 300 DPI. Creating and editing this page took a few minutes. These kinds of time savings add up quickly. How much is your time worth? Finally, let's move on to the purpose of this article, to cut the learning curve of *Calamus*.

The Opening Screen

In figure 1 we have the opening screen of *Calamus*. Actually, even this aspect of the program can be customized. On the top of figure 1 are the various loaded modules. I've pasted onto the opening screen the various icons from the *Text Effects Module* menu. Selecting *Text Effects* allows you to choose between these options. Once again, this *looks* more intimidating then it actually is. To continue, if you've just run the program and want to get started with laying out some text, just select the text frame icon, which is shown highlighted in figure 1. As you do this, on the upper right of the screen a brief explanation of the icon function will be shown, including where in the manual you can find more information. This holds true for ***every icon*** in the interface. DMC refers to this facet of the program as "on-line help." Actually, the entire interface is on-line help. Ok, you've selected the text frame icon; now draw your frame. Since *Calamus* is a frame-based program, everything that is created or imported is done in these different frame types. Once you've created your text frame, select either of the icons from the top row of modules, for text, either *Text Effects* or *Text Modules*. (There is also the *PSK Write* word processor; more on that module later.) Now, when you select your drawn frame, you are presented with a cursor, and, presto, you can start typing. To change the size or style of the font, call up the *Text Effects Module* and make these changes. Changing the typeface is done from a separate dialog within the same module. This is a description of the ultimate beginner creating text. How would a more advanced user accomplish the same task? This leads us to the real power of *Calamus SL*, the macro recorder.

The Macro Recorder

Like the word "module," this is a confusing term. *Calamus* uses many kinds of macros, which is to say that a particular text effect, or text formatting, can be saved as a "macro" and used over and over for repetitive changes in a long document. This is not what I mean in describing the macro recorder. Pressing [Alternate] + [Escape] starts a little tape recorder from within the *Calamus* program. Every key stroke is recorded until you once again hit [Alternate] + [Escape]. *Calamus* then presents you with a dialog to assign key strokes to duplicate all your icon clicks in one simple operation. It now becomes possible to create, edit and change text *without* switching from icon to icon.

To create my little document, I would do the following: Draw my frame and then hit [Alternate] + [a]. This brings me to the font size option. I would then select from the choices available or type in my own odd size. Clicking on [Control] + [f] brings me to the different typefaces available. Finally, hitting the [F6] key would insert this size as the default. As I type along, I can instantly make changes in the font or size of the font just by repeating these combinations.

What keys are available for the assignment of these macros? In figure 2 is the macro recorder dialog. As you can see, just about any key or combination of keys can be assigned for each macro. But the program doesn't stop there. At any time you wish, you can go back and change these keys to other combinations. ***You can create, save, load and/or delete these combinations at any time!*** This can all be accomplished at your own speed, at your own time. From the first day you purchase the program, you are up and running.

The biggest handicap to learning *SL* is getting over the intimidation factor. Aside from the numerous icons, the manual is intimidating. Six hundred plus pages! Let me stop and put in a good word for DMC. When *Calamus* version 1 came out, the manual was 200 pages of reference material. Learning the program was a nightmare of confusion. DMC has taken all the criticism of their initial manual to heart. The manual for *SL* is a superb piece of work. Could it be better? Sure it could, but my rule of thumb is that if I could do a better job of writing a manual then the programmer, then the manual stinks. In this case, I wouldn't even know where to begin to improve on this document. My one criticism is a lack of emphasis on the above described macro recorder. If I were writing the manual I would start every chapter with a tutorial on creating new macros for this recorder; it's that important.

When *SL* first came out, it came with almost no pre-defined macros. Apparently, many people complained over this and the latest releases of *SL* come with at least a hundred of these macros. In the long run, this is both a plus and a negative. Many users *don't* understand or want to develop their own macros. They laboriously memorize the key strokes and functions that DMC included. For someone like myself, who has trouble memorizing my own phone number, I much prefer to do my own customizing. I went through the list of supplied macros and deleted macros or changed the key combinations to my heart's desire. Remember, this is not a *fixed part of the program*. While I prefer to design my own macros from scratch, going through the list of *supplied* macros gave me ideas that I just hadn't thought about. In that sense, I appreciate DMC's effort. It is, in fact, hard to fault DMC for trying to answer the requests of individuals who don't understand the concept of an interface being a tutorial. How does one market such an approach? Just reading the words makes it sound like a half baked product, while the exact opposite is the case. Users ***must learn the keyboard macro system to get results which approximate the speed of sound!*** In other words, *SL* is a fast, but cumbersome, program, *if one simply uses just the icon interface.* It becomes jet propelled when the macro system is learned; and learning the macro system can take place at your own speed.

I often have to type in Spanish, what the heck, using the macro system I gave myself key equivalents for the accented letters. The final result of these macros is a foreign language typewriter. I saved this as a separate macro list, to be loaded only when I am typing in Spanish. Another example of the practical end of the macro system is with the built in *Word Processor Module, PSK Write.* This is not to be confused with the other two text modules. This is a full featured, *fast,* text editor with most of the features you expect from a word processor. Calling up this editor ([Alternate] + [t]) allows me the functionality of a fast word processor within the *Calamus* environment. Once again, this can be confusing in description because the *Text Editor Module* allows quick entry of text directly into a text frame. If *SL* was limited to just the *text modules* I wouldn't have complained, but the word processor is icing on the cake. The first version had one minor bug. Instead of waiting for the next update to the program (and the program is updated all the time) I made a macro to work around the bug. Since that first release of *PSK Write*, the updated versions have long ago repaired that problem but the point is, that the key stroke macro recorder allows you to compensate, even for inadequacies or overly cumbersome features that the program might have. There is another great advantage to the *PSK Write Module.* I spend much of my time messing around with .IMG and .TIFF files. *Calamus* comes with contrast and brightness controls in one part of the *Frame Module* and screening controls in the *Raster Generator Module.* If I were only using *Calamus* through its icon interface, my mouse would get heavy duty use, as I switched between these modules, and various text modules. But at *any time* I can call up *PSK Write* simply by pressing [Alternate] + [t], and I am editing text, or call up the *Raster Generator* by hitting [Control] + [p]. This is what I mean by speed and power.

The remaining *standard modules* of *Calamus* are *Document Converter*, for converting *Calamus 1.09* files to *SL*, *Rotate*, which allows the rotation of any frame by one degree increments, *Color List*, which examines a document for the colors which are in it, and creates accessible colors which can be assigned to text and raster objects, *Color Gray*, which allows the conversion of color images to gray scale images, *Compress*, which acts on large IMG, TIFF, or other image formats, and compresses them, both while you are working with the program, and in saving the document as a file. This module saves significant memory and disk space. *Focultone*, which allows you to adjust your colors to the Focultone standard, *Linear*, which allow gradient and contrast control of output to color printers, *CYMK Swap*, which is a little toy module, which allows you to swap between the CYMK colors of color images. This little toy sometimes produces some surprising professional results. Finally, the *System Parameters Module*, which allows you to adjust the way *Calamus* uses memory, and a number of other functions to tailor the program to your system and the way you use the program. If you purchase the program outright, then the optional modules *Speedline*, an auto tracer, *Color Separator*, to give more control over color separations and *Vector Art*, a powerful vector drawing program are also included. These last three are optional if you are upgrading from *Calamus* 1.09.

Finally, in discussing *SL* and its unique modular system, there are the optional modules. You can spend enormous amounts of money, *if you choose*, to acquire all of them, but what are they? In essence, the optional modules are complete programs for doing related DTP work. A full featured Vector program, *Line Art*, is a module which smoothly integrates itself within *SL*. *Speedline* is an excellent auto tracer for converting bit images into vector graphics. Plus, you never have to leave *SL* to use these functions. Since these are modules and not separate programs, they are actually cheaper than buying stand alone programs. Naturally, the power of these modules varies quite a bit. *Line Art* compares favorably with any vector drawing program and costs $150, while the bit image module, *Brush*, is only good for minor touching up of your work. But brush costs only $30. *Speedline* is, perhaps, the best value of all at only $50. There are numerous other modules, each capable of optimizing your experience with DTP, *but you can get them or not get them*, depending on your needs. They provide functions which can sometimes be performed better by stand alone programs, but the point is, that they can fill in the gap for particular kinds of work and do it from within one program. From this point of view, *Calamus SL* is actually an inexpensive world in itself, for the production of professional documents. There is even a module, *The Bridge*, for exporting frames, pages or complete documents into every conceivable format you can think of. This gives *Calamus* cross program and cross platform compatibility. There are many, many more. Save an entire page as an IMG or TIF file for other programs; go ahead, make my day.

A few last comments about my love affair with this program. A program of this power *needs support.* DMC provides consistent, high level support five days a week. This is no easy matter for the Atari platform. As part of this support DMC provides its own service bureau for lino output either to hard copy or film, including four color separations. I can personally testify to the high quality of their output.

I've recently been able to get *Retouche Professional CD* working on my graphics card. I had planned to do an article similar to this month's, but covering *Outline Art III.* I'll see how fast I can master *Retouche* before making up my mind. *Retouche* might be facing some severe competition from other sources. I also hope to clear up the confusion surrounding who owns and distributes *Retouche* (Now known as Das Repro). At the moment, I am getting in touch with CGS in England and I hope for the best. Until next month.

Woods Music

by

Gary Woods

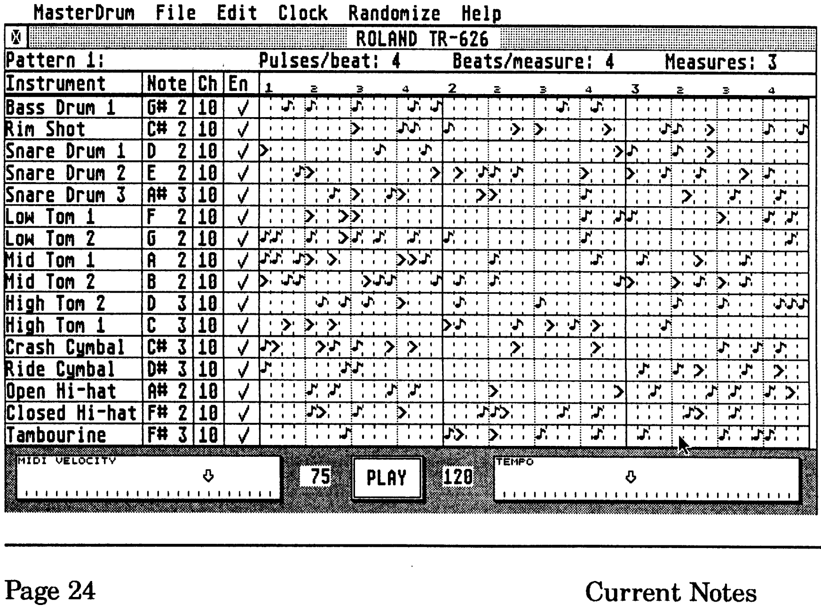
MIDI Master Drummer

All right, it's finally happened. The thing I've been waiting for since I started this column. You thought the big money and fame were enough, well it's not. The thing I've been waiting for finally arrived in the mail. It's called FREE STUFF. Every day I go to my mail box looking for a copy of *Cubase Audio* from Steinberg, or maybe the latest version of *Omega II* from Doctor T, possibly even a big box from Yamaha with a CBX-D5 for me to use to my heart's content. Well, this'll just show all those Big Deal companies. I just got a copy of *MIDI Master Drummer 2.5.* Okay, so it's not a full blown example of the hippest gear to come down the pike, but at least it's something, and a pretty good product to boot.

The *MIDI Master Drummer* is a pattern oriented drum editor that runs on the ST/TT family of computers, and is also completely Falcon compatible. You can use it by itself, or data can be saved as Standard MIDI Files, which can be loaded into another sequencer. The overall architecture of the software consists of 99 Patterns, which can be combined into 16 Phrases, which can then be combined into Songs.

Pick Your Instruments

When the program first comes up you see the Pattern Mode Screen, which consists of instrument names, tempo and velocity information, and a grid into which notes are placed. Down the left hand side are 16 slots in which the names of the instruments reside. 16 instruments seems like a small number to me, but I'm sure for most of the music that most people create it's more than adequate. The names can be changed by Clicking on them, and then writing in the new name.



Pattern 1: Pulses/beat: 4 Beats/measure: 4 Measures: 3

Instrument	Note	Ch	En
Bass Drum 1	G# 2	10	✓
Rim Shot	C# 2	10	✓
Snare Drum 1	D 2	10	✓
Snare Drum 2	E 2	10	✓
Snare Drum 3	A# 3	10	✓
Low Tom 1	F 2	10	✓
Low Tom 2	G 2	10	✓
Mid Tom 1	A 2	10	✓
Mid Tom 2	B 2	10	✓
High Tom 2	D 3	10	✓
High Tom 1	C 3	10	✓
Crash Cymbal	C# 3	10	✓
Ride Cymbal	D# 3	10	✓
Open Hi-hat	A# 2	10	✓
Closed Hi-hat	F# 2	10	✓
Tambourine	F# 3	10	✓

To the right of the Instrument Name is the Note Location. When you click on this area, a 7-octave Piano Keyboard opens up on which you can choose a note value from C1-C8 for the selected instrument.

To the right of the Note Name is the MIDI Channel selector. Each instrument can have its own MIDI Channel, and in today's multi-instrument setups, this is mandatory. I know many people who have the bass drum coming from one instrument and the snare from another, and so on. In fact, I would like to see the programmer add the potential for a multi-port situation, in which more than one set of 16 instruments could be addressed. As a friend of mine once said, "These days, 16 MIDI channels don't make much sense." A device like the Export Box from Notator with three extra MIDI outputs providing you with a total of 64 MIDI channels might be a good, inexpensive place to start.

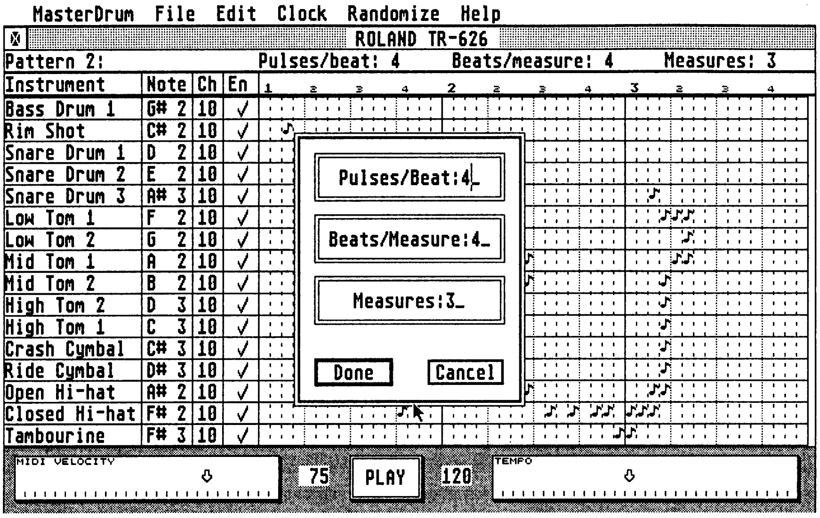
Next to the MIDI Channel selector is a column labeled "En," for Enable. The options here are a check mark, which shows that the track is active, an "S," which shows that the track is Selected, and an "M," for Mute.

Once all the changes concerning Instrument Names, Channel Assignments, and whether the track is to be Muted or not have been made for your MIDI setup it can be saved and brought back when needed. Or, you can name your setup DEFAULT.CFG and it will automatically come up when the program is started.

Set the Meter

Now it's time to figure out what the meter for our first pattern is to be. For this we proceed to pull down the Edit Menu, and then to select Meter. This area is a little confusing at first in that everything has to add up to 48, which put some pressure on my math skills; but it all came together after a while. For example, if a beat has 4 pulses you can play 4 sixteenth notes, or any even multiple of that like an eighth or quarter note. If a beat has 6 pulses you can play 6 sixteenth note triplets, or any even division of that, like eighth note triplets, eighth notes, or quarter notes.

Once you have decided what your basic building block of pulses is to be, you then have to decide how many beats are in a measure. You can have as many or as few beats as desired, with the caveat about 48 which we'll sort out a little later.



Pattern 2: Pulses/beat: 4 Beats/measure: 4 Measures: 3

Instrument	Note	Ch	En
Bass Drum 1	G# 2	10	✓
Rim Shot	C# 2	10	✓
Snare Drum 1	D 2	10	✓
Snare Drum 2	E 2	10	✓
Snare Drum 3	A# 3	10	✓
Low Tom 1	F 2	10	✓
Low Tom 2	G 2	10	✓
Mid Tom 1	A 2	10	✓
Mid Tom 2	B 2	10	✓
High Tom 2	D 3	10	✓
High Tom 1	C 3	10	✓
Crash Cymbal	C# 3	10	✓
Ride Cymbal	D# 3	10	✓
Open Hi-hat	A# 2	10	✓
Closed Hi-hat	F# 2	10	✓
Tambourine	F# 3	10	✓

Pulses/Beat:4

Beats/Measure:4

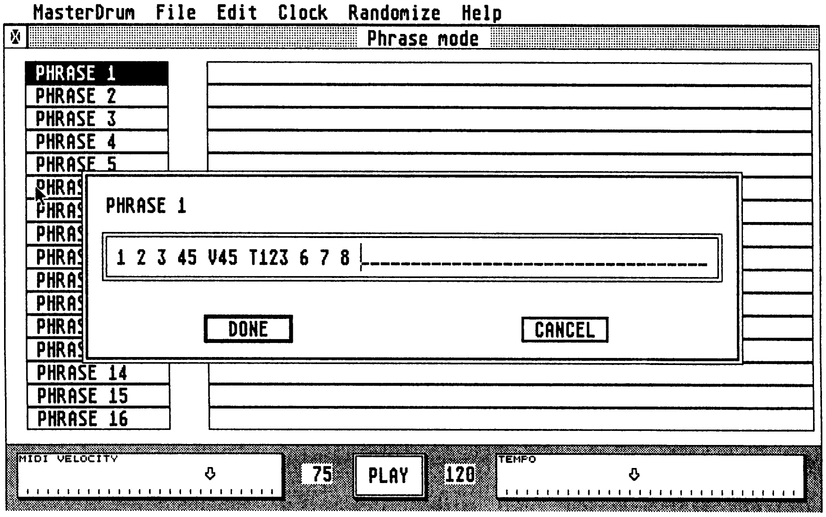
Measures:3

After deciding the number of pulses, and beats, the next step is to figure out how many measures our pattern will contain. Again. the number can be anything desired, with the same caveat; and here it is. To find the proper number of 48 or less, you must take the number of pulses, times the number of beats, times the number of measures. For example, if we had 6 Pulses, 4 Beats, and 2 Measures, that would be 6X4X2=48. Are you still with me? It's a little convoluted, and why the number 48 is chosen is a mystery to me, but there it is. Maybe, if instead of pulses the author dealt with quarters, eighths, triplets, etc., it would be easier to understand, but maybe not. The other element which is a little strange at first, is that the default pattern consists of 3 measures of 4 beats, with 4 pulses in them. The 4 beats with 4 pulses is okay, but 3 measures is very odd. Most drum patterns are either 2 or 4 measures long. This means that almost every time you start a new pattern you have to go in and change the meter. I think the term Needlessly Cumbersome applies here.

Put in Your Notes, Tempo, and Play!

Now that we've got the proper number of pulses, we're finally ready to start putting in some notes. To do this you go to the instrument desired, and then to the right until you find the desired Pulse, Beat, and Measure, and simply click with the Left Mouse Button which places a small eighth note icon on the Pattern Grid. Entry is quick and easy, so my grid filled up fast.

After you have entered some notes, next you have to decide on a Tempo. This is adjusted by clicking and dragging the bar across the bottom of the screen. You can also adjust the Velocity to a desired level, which has an effect on the loudness of the piece, and viola. Press Play and you'll hear your creation. Pretty neat, huh? The music produced felt a little rigid for my tastes, but you can slide each instrument's notes forward and backward to give a slight rush or drag feel.



PHRASE 1

1 2 3 45 V45 T123 6 7 8

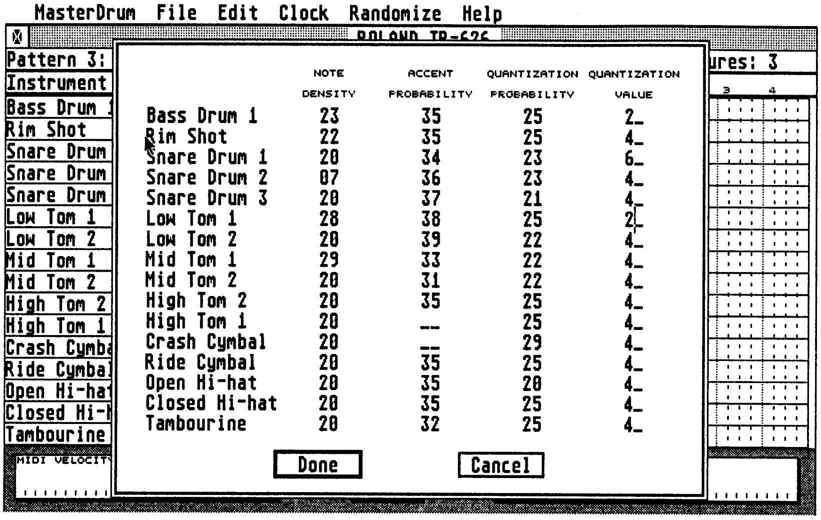
Now to a feature that I really like. Besides the regular note you can place 9 different velocity values on the Grid. These Accent values can be edited, and then placed on the Grid using the keyboard numerals 1, 2, 3, etc.. This can definitely add a lot of interest to your drum parts, taking a dull performance and making it into something musical.

To aid in putting in your music, notes from one instrument can be copied or moved to another instrument, which could speed up entry of the data considerably. Also, information from 1 pattern can be copied to any of the other 99 patterns. This is very helpful, because most drum parts tend to be repetitive with only a few variations. So, the basic part could be copied, and then the variations could be applied as needed.

Another feature I like very much is the ability to Automatically Generate Parts. The user addressable parameters which can be applied to generate the parts are Note Density, which determines the probability that a drum note will appear in a particular pulse. Accent Probability which determines the likelihood that a drum note will be accented. Quantization probability which sets the probability a note will be quantized, and, finally, the Quantization Value to which the note will be rounded. This feature can be applied to a single instrument or the entire Pattern, and can offer a good jumping off point to start working on a composition.

Get That Phrasing Just Right

Once you have all the Patterns you need, the next step is to go to the Phrase menu. There are 16 Phrases and they can be accessed with the up and down arrows. Entry here is more like a text editor, with the number of the Pattern placed on a line followed by a space, and then the next Pattern number. In addition to Patterns, also Velocity, Tempo, and Repetitions of a Pattern can be part of the text line. Entries such as V64, specifying a Velocity of 64, T123, a Tempo of 123, and R4,



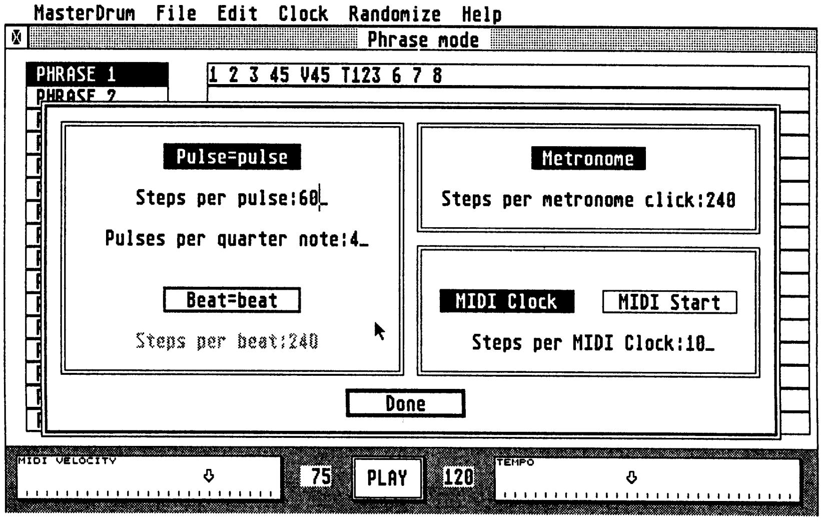
	NOTE DENSITY	ACCENT PROBABILITY	QUANTIZATION PROBABILITY	QUANTIZATION VALUE
Bass Drum 1	23	35	25	2_
Rim Shot	22	35	25	4_
Snare Drum 1	20	34	23	6_
Snare Drum 2	07	36	23	4_
Snare Drum 3	20	37	21	4_
Low Tom 1	28	38	25	2_
Low Tom 2	20	39	22	4_
Mid Tom 1	29	33	22	4_
Mid Tom 2	20	31	22	4_
High Tom 2	20	35	25	4_
High Tom 1	20	--	25	4_
Crash Cymbal	20	--	29	4_
Ride Cymbal	20	35	25	4_
Open Hi-hat	20	35	20	4_
Closed Hi-hat	20	35	25	4_
Tambourine	20	32	25	4_

specifying that Pattern 4 would be repeated 4 times can be included along with the number of a particular pattern. Tempo and Velocity fluctuations can add a lot of life to a Pattern, and make it into a much more musical expression.

After you have all your Patterns put together it's time to combine them into a Song. This is accomplished in an Editor that looks exactly like the Pattern Editor, and works exactly the same way. Patterns are combined just as before, with even the options of Velocity, Tempo, and Repetion still available. Let's see now, that makes three levels of Tempo and Velocity variations; my hunch is you'd be pretty confused by now if you applied variations at each one of those stops.

Set Your Clock and Save!

To complete the features, under the Clock Menu, you first have 2 choices, Beat=Beat, and Pulse=Pulse. If you use measures with different numbers of Pulses per Beat then it would be best to choose Beat=Beat. This allows some measures to have 16th note pulses per beat and others to have 32nd note pulses per beat (or other divisions) and still keep a consistent tempo.



1 2 3 45 V45 T123 6 7 8

Steps per pulse:60_
Pulses per quarter note:4_
Steps per beat:240
Steps per metronome click:240
Steps per MIDI Clock:10_

With Pulse=Pulse you are asked for the number of Steps Per Pulse, and the number of Pulses Per Quarter Note. So, for example, a setting of 60 Steps Per Pulse and 4 Pulses Per Quarter Note would give you a resolution of 240 Pulses Per Quarter Note. This becomes particularly important when you save your data to Standard MIDI Files to be loaded into a sequencer. If you don't match the number of Pulses Per Quarter Note to the sequencer you're downloading to, your music will not play correctly.

Finally, under Clock, they give you the option of selecting an internal tempo under the Metronome button which can be from 20 to 245 beats per minute. Also, there is a button labeled MIDI Clock, which must be set if you want to dump information to a sequencer, and, last, a button labeled MIDI Start, which enables the program to initiate the data dump.

At this point you can save your music. Your options are Individual Patterns, All the Patterns, or everything into what they call a Song file. Also, the song can be saved as a Standard MIDI File which you can load into a sequencer. To me, this is probably the best use of the program.

Summary

MIDI Master Drummer is a good product which could probably best be used with a stand alone hardware or software sequencer, which could take the Standard MIDI Files the program generates. I would like to see more than 16 Phrases available, and 16 drums seems a little bit limiting. Also, I would like the program even better if it was possible to use it as an Accessory that could run along with a software-based sequencer. At a retail price of $44.95, it is definitely a winner and could be used for a lot of different applications.

For more information on *MIDI Master Drummer* contact:
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6428 Valmont St.
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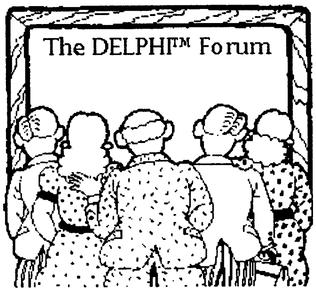
FAX: 818-352-6559



Telecommunications Glossary

by Joseph Turner

This is a glossary of terms commonly used by telecommunications enthusiasts, as well as words specific to offline mail reading and Bulletin Board Systems. We hope you find the information useful.

Adaptive Rate: The ability for data communications equipment to react to the hanging conditions of the telephone line. Most modems provide this feature to ensure that data is sent and received properly even on trouble prone communications lines.

Analog Loopback Test <local>: A test that checks the internal operation of the MODEMS transmit and receive circuitry by looping test characters within the modem.

ARQ: Automatic Repeat Request. A general term for error control protocols featuring hardware detection and retransmission of effective data. This term is used primarily by US Robotics.

ASCII: American Standard Code for Information Exchange. A 7-bit binary code representation of letters, numbers and special characters. It is universally supported in computer data transfer.

Asynchronous: Data transmission in which the actual data is preceded by a start bit and followed by a stop bit since the time between transmitted characters varies.

Auto Answer: The modem feature that enables detection of a ring and answering without assistance from a program.

Baud Rate: The number of discrete signal events per second occurring on a communications channel. It is often referred to as Bits Per Second (BPS), which is technically inaccurate but widely accepted.

BBS: Bulletin Board System.

Bit: Binary Digit. A single basic computer signal consisting of a value of 0 or 1, off or on.

Buffer: A memory area used for temporary storage during input/output operations.

Bulletin Board System: A host system into which callers may dial with their modems to read and send electronic mail, upload and download files, and chat online with other callers.

Byte: A group of bits acted upon as a group, which may have a readable ASCII value as a letter or number or some other coded meaning to the computer. It is commonly used to refer to 8-bit groups. 1 kilobyte = 1,024 bytes; 64K = 65,536 bytes or characters.

Carrier: A continuous frequency capable of being either modulated or impressed with another information-carrying signal. Carriers are generated and maintained by modems via the transmission lines of the telephone companies.

Class 1 FAX: A FAX protocol in which all handshaking is handled by FAX software.

Class 2 FAX: A FAX protocol in which some of the handshaking is handled by FAX software, and some is handled by FAXmodem hardware.

Conference: An area of public messages on a Bulletin Board System, usually with a particular topic and, often, a conference host or moderator to guide the discussion. Also called Folder, SIG (for "Special Interest Group") or Echo.

CCITT: A French acronym for the International Telephone and Telegraph Consultative Committee. This international organization defines the standards for telephone equipment such as the Bell 12A standard for 1200 baud, CCITT V.22 for 2400 baud and CCITT .32 for 9600 baud.

CPS: Characters Per Second. A transfer rate estimated from the bit rate and length of each character. If each character is 8 bits long and includes a start and stop bit for Asynchronous transmission, each character needs 10 bits to be sent. At 2400 baud it is transmitted at approximately 240 CPS.

CRC: Cyclical Redundancy Check. An error-detection technique consisting of a cyclic algorithm performed on each "block" of data at the sending and receiving end of the transmission. As each block is received, the CRC value is checked against the CRC value sent along with the block. Many protocols, including XMODEM-CRC and ARQ, will request a resend until the block is received correctly.

Download: Receiving a file from a Bulletin Board System, using a terminal program (for example QModem) and a transfer protocol (for example modem).

DCE: Data Communications Equipment. The device that relays the data originated by the DTE. A modem is an example of a DCE device.

DTE: Data Terminal Equipment. The device that is the originator or destination of the data sent by a modem. A computer is an example of a DTE device.

DTR: Data Terminal Ready. A signal generated by most modems indicating connection between the DTE (computer) and the modem. When DTR is "high," the computer is connected.

Data Compression Protocols: Compression of data by the modem allows more information to be transferred in a shorter time frame. Protocols for data compression include CCITT V.42bis and MNP 5.

Data Transmission Protocols: These are standards for modulation and transmission of data at various speeds. The standards are Bell 103 & V.21 for 300 bps, Bell 212A & V.22 for 1200 bps, V.22bis for 2400 bps, V.32 for 600 bps and V.32 bis for 14,400 bps. Proprietary protocols are also used extensively for higher baud rates.

Digital Loopback Test ‹local or remote›: These tests are performed when local and remote modems have a data connection. In a local test, the remote modem sends data to our modem, which loops it back to the remote modem. This lets the remote modem user evaluate his DTE/DCE connection, the phone line and your modem. In the remote test, the opposite occurs, allowing you to verify your serial port ‹DTE/DCE›, phone line and the remote modem.

Echomail: Public Message Conferences on a Bulletin Board System that are shared and distributed among other Bulletin Boards as part of an echomail Network.

Flow Control: A mechanism that compensates for differences in the flow of data to and output from a modem or computer. Either hardware or software can be used for this control to prevent data loss. Hardware flow control using the modem makes use of a buffer to store data to be sent and data received. Flow control is necessary if the Communications port is locked at a higher rate than the connection rate. See RTS/CTS and XON/XOFF

Error Control Protocols: These are various modem-based techniques that check the reliability of characters or blocks of data at a hardware level. Examples include MNP 2-4, V.42.

Freeware: Computer software that may be distributed on Bulletin Board systems, and for which the author requests no license fee or registration fee.

Full Duplex: Signal flow in both directions at the same time. It is sometimes used to refer to the suppression of online LOCAL ECHO and allowing the remote system to provide a REMOTE ECHO.

Half Duplex: Signal flow in both directions, but only one way at a time. It is sometimes used to refer to activation of LOCAL ECHO, which causes a copy of sent data to be displayed on the sending display.

Host System: Another name for a Bulletin Board System (BBS).

LAPM: Link Access Procedure for Modems. An error correction protocol specified in CCITT V.42 recommendation for error correction.

Local Area Network (LAN): A group of computers joined with cables and software, allowing hard disks and other devices to be shared among many users.

Mail Door: A subsection of a Bulletin Board System that creates .QWK mail packets.

MNP: Microcom Networking Protocol. A set of hardware error protection protocols (MNP levels 1-4) and data compression techniques (MNP level 5) developed by Microcom, now in the public domain. It makes use of CRC and retransmission of defective blocks by checking performed within the modem.

Modem: An acronym for MOdulator/DEModulator. A modem uses standard telephone lines to transmit data, and must convert the computer's binary language into audio tones (MOdulate) for transmission over the telephone lines and then convert the audio tones back to binary code (DEModulate) for the receiving computer to process the data.

Netmail: Private electronic mail that is transmitted by a user calling one Bulletin Board System to another user calling a different bulletin Board System.

NRAM: Nonvolatile Random Access memory. A user-programmable memory chip whose data are retained when power to the chip is turned off. NRAM is used in many modems to store default settings.

ON/OFF Hook: A descriptive term referring to manually lifting a telephone receiver (taking it OFF Hook) and replacing it (going ON Hook). OFF Hook produces a busy signal on the phone line.

Packer: A program to compress multiple files into a single file, such as ZIP, ARC or LHARC.

Packet: A mail packet (with a .QWK extension) from a host system.

Parity: An error detection method used in both communications and computer memory checking to determine character validity. Communications now makes use of more efficient "block" checking although parity must still be matched in a communication session or transfer to take place correctly. Host communication in the BS environment omits parity checking (no parity).

Protocol: A system of rules and procedures governing communications between two devices. File transfer protocols in your communications program refer to a set of rules governing how error checking will be performed on blocks of data.

Public Domain: Computer software on which no copyright exists (usually by a specific statement to that effect by the author), and which may be freely used and distributed.

Remote Echo: A copy of the data being received is returned to the sending system for display on the screen. See Full/Half duplex.

RTS/CTS: This is hardware flow control, used between the DTE and the DCE. When the DCE buffer is nearly full, it will drop the CTS ‹Clear To Send› signal, halting the data flow from the DTE until the buffer is nearly empty, when the CTS signal is raised. RTS ‹Request To Send› and CTS are used together with a time-delay option in synchronous applications.

Shareware: Computer software that is distributed on the "Honor System" and may be freely copied and distributed, but for which a registration fee or payment is required for continued use beyond an initial evaluation period. Copyright may be retained by the author.

Synchronous: Transmission in which characters or bits are sent at a fixed rate, with the transmitting and receiving devices synchronized to each other via precise timing signals. Control is usually provided by software using special ASCII symbols to frame data.

SysOp: The SYStem OPerator of a Bulletin Board System. The person responsible for setting up and maintaining the BBS.

Thread: A group of BBS messages and replies linked and sorted by topic.

Unpacker: A program to uncompress a file from a Packer.

Upload: To transfer a file from your computer to another computer, using your terminal program (for example, *STalker*) and a transfer protocol (for example, Zmodem).

V.21: CCITT standard for modem communications at 300 bps. Modems made in the US follow the Bell 103 standard.

V.22: CCITT standard for modem communications at 1200 bps, compatible with the Bell 212A standard used in the US and Canada.

V.22 bis: CCITT standard for modem communications at 2400 bps. It includes automatic fallback to 1200 bps and compatibility with Bell 212A nd V.22 modems.

V.23: CCITT standard for modem communications at 1200 bps with a 75 bps back channel. It is used in the United Kingdom.

V.32: CCITT standard for modem communications at 4800 and 9600 bps. It includes automatic fallback to 4800 when line quality is poor.

V.32 bis: CCITT standard for modem communications at 14400 bps with automatic fallback to 12000, 9600, 7200 and 4800 bps. As line quality improves communications speed can also be increased to the next higher rate.

V.42: CCITT standard for modem communications that defines negotiation or LAPM error control. V.42 also includes support for MNP error correction protocol levels 1-4.

V.42 bis: CCITT extension of V.42 that adds data compression to the V.42 correction protocols. Supports up to a 4:1 compression rate, and can only be used with LAPM error correction. It is not compatible with MNP.

First STeps:

Atari Multitasking

by Paul Lefebvre

Lately there has been a lot of talk in the Atari community about multitasking. People seem to be confused as to what it actually means and how it is accomplished. This article will discuss multitasking as it pertains to Atari and then discuss the three currently supported multitasking systems available in the U.S.

Some Simple Operating System Concepts

Multitasking	The ability to perform multiple tasks simultaneously.
Process	A process is basically a program in execution. It consists of the program itself and any related data (such as a resource file).
The Shell	The desktop is commonly referred to as the shell. Any program that allows others to be executed is considered a shell.
Dispatcher	The part of an operating system that determines which process will be allowed to execute.

Atari TOS Organization

BIOS	Basic Input/Output System: Collection of low-level routines that aren't necessarily specific to ST hardware.
XBIOS	The eXtended BIOS: A collection of Atari specific routines.
GEMDOS	Based on *MS-DOS*, this is the Atari's high level file system.
GEM	Digital Research's Graphics Environment Manager consists of two key parts: VDI and AES.
VDI	Virtual Device Interface: Device-independent interface that allows programmers to perform graphics output for a program. Programs such as *Warp 9* and *NVDI* replace and significantly speed up the VDI.
AES	Application Environment Services: This is the interface that provides the routines commonly used by programs, including drop-down menus, windows, icons, etc.

Starting Off

There are two types of multitasking methods available: *preemptive multitasking* and *cooperative multitasking*. Although both provide a multitasking system, they accomplish it in different ways.

A preemptive multitasking operating system works by maintaining a list of all active processes in memory (inactive processes are not on this list, because they do not need to run). The process at the top of the list gets to run for a short period of time. After its time has expired (called a timeout), the dispatcher moves (or preempts) the process to the end of the list, thus giving the next process a chance to run. A program does not know when it will be preempted by the operating system. This type of operating system makes more demands on the processor, so its overall speed is slower than that of cooperative multitasking.

A cooperative multitasking operating system also maintains a list of all active processes in memory. But, the process at the top of the list has complete control of the computer until it relinquishes control by calling the dispatcher. On the Atari, the dispatcher is invoked whenever an AES library function is used. A program that makes frequent calls to the AES will coexist and cooperate with other programs perfectly. A program that performs a lengthy task without ever making an AES call will 'hog' the system, preventing background tasks from running. This type of program is uncooperative and would not work well in a multitasking environment. With cooperative multitasking there is little slowdown with the current process, but background processes can sometimes grind to a halt.

From day one, our Atari computers have had a limited form of cooperative multitasking made available through GEM. Up to six desk accessories and one main program can be in memory at once. This is a total of seven processes, of which only one (the main program) can be changed without rebooting. If you use *STalker* for background downloads, or have printed something with *1st Word Plus* (or *Word Writer*), you have been using the cooperative multitasking provided by the AES.

This type of multitasking may not be sophisticated or flexible, but it does work and uses little memory (for the operating system—having six desk accessories loaded can take up a lot of memory). For most people, it is probably all they will need. Others will want something more powerful. Luckily, there are several other multitasking systems available. We will cover the three that are currently available in the U.S., in the order they appeared.

First Up, MiNT

MiNT, which originally stood for MiNT is Not TOS, is a replacement for GEMDOS. It was developed by Eric Smith (now a programmer at Atari) to provide a more Unix-like interface for the Atari. It is available on just about every major network (and in the Current Notes PD Library). The current version can only be distributed in source code form, but version 0.95 is allowed to be distributed in compiled form.

MiNT provides preemptive multitasking for your Atari. But, it can only multitask TOS programs. Programs that make use of GEM cannot multitask any differently than they do on an Atari without *MiNT*. *MiNT* can be extremely useful for the user who needs to multitask TOS programs. This means that you need to run it from a command line interface (CLI) to notice any real benefit from it, although there is a TOSWIN accessory provided that allows TOS programs to run inside a window on the desktop.

MiNT is mostly used by programmers. It really doesn't give any benefit to people using GEM applications. But, if you are looking for a way to make your Atari resemble a *Unix* terminal, this is it.

MultiTOS: The Great Attempt

Several years ago, Atari announced they were working on a multitasking version of TOS that would be based on *MiNT*. People were excited. Atari licensed *MiNT* and eventually hired Eric Smith to work on *MultiTOS*. In May of 1993, *MultiTOS* was packaged with the initial shipments of the Falcon030. In late June. it was available for other Atari users to purchase. People. again, were excited. Then the reports started coming in: *MultiTOS* is slow, *MultiTOS* is incompatible with my software, etc. Read on and I will explain why I call it "The Great Attempt."

MultiTOS is an enormous achievement. This is an operating system that provides preemptive multitasking for every Atari, from a 1MB 520ST to a 26MB TT. It is a replacement for GEMDOS and the AES, providing multitasking for both TOS and GEM programs. It removes the six desk accessory limit and provides many other neat features, including 3-D window and dialog gadgets. However, *MultiTOS*'s power comes at a price, and that price is speed. Inherent in any preemptive multitasking system is a slowdown that occurs because the processor spends lots of time switching between active applications. Unfortunately, an 8MHz 68000 does not have enough horsepower to handle all the work that *MultiTOS* has to do. To its credit, Atari has always recommended at least a 16Mhz 68030 for use with MultiTOS.

The other problem *MultiTOS* has is with compatibility. Since most Atari programs were written before any multitasking OS existed, problems are to be expected. But many of these programs are no longer supported, so there is often no way to get them to work correctly with *MultiTOS*. If you only use current applications that support multitasking and have a fast Atari (68030), then you will want *MultiTOS*. Also, if you are a programmer, you will probably be attracted to the Unix-like routines that *MultiTOS* provides.

Geneva: Multitasking for the Rest of Us

Geneva, from Gribnif Software and written by Dan Wilga of *NeoDesk* fame, is a multitasking AES replacement. Because it is able to drop into single-tasking mode for troublesome applications, it is highly compatible with most Atari software and it only starts to slow things down when many applications are running at once. *Geneva* adds full cooperative multitasking to the AES. As with *MultiTOS*, it removes the six desk accessory limit and has neat 3-D window and dialog gadgets. *Geneva* does not come with its own desktop, but it really doesn't even need one. Programs can be run, copied, moved, etc. right from the *Geneva* Manager shell. Any desktop software, including *TeraDesk* and NeoDesk, can be used with *Geneva* if you really want to maintain the desktop metaphor.

Geneva does have some problems, however. It will attempt to run TOS/TTP programs in a window (using a program called *Geneva TOS*) to help maintain the multitasking environment, but it doesn't yet work all that well. You can bypass *Geneva* TOS and have your TOS/TTP program run full screen, but that prevents them from multitasking at all. *MultiTOS* and *MiNT* are much better at working with TOS/TTP programs.

Basically, *Geneva* provides Atari users with most of the functionality of *MultiTOS* without the slowdown or compatibility problems. If you have a 68000 series Atari, it is the only acceptable way to provide multitasking.

Do You Really Need Multitasking?

Now that we've gone through all this in detail, you really need to ask yourself this question: How often do you need to do more than one thing at a time? The two most common tasks that people hate waiting for their computer to do are modem transfers and printing. If you use a program such as *STalker*, you can perform all your transfers in the background without *Geneva* or *MultiTOS*. Printer spoolers such as *GEMSpool* can eliminate waiting for the printer. Probably the most benefit a user will get from using a multitasking system will be from the task-switching. Keeping several programs in memory and switching between them with a mouse click will do wonders for increasing your productivity.

Products Mentioned:

Geneva ($69.95) and *NeoDesk 3* ($34.95) from Gribnif Software, P.O. Box 779, Northampton, MA 01061-0779. Phone: (413) 247-5620 10a-6p EST.

MultiTOS ($59.95), Atari Corporation, 1196 Borregas Avenue, Sunnyvale, CA 94089-1302. Phone: (408) 745-2000.

MiNT (FREEWARE), available on most major online services, Current Notes ST Library

TeraDesk (FREEWARE), available from most major online services, Current Notes ST Library.

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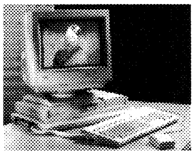

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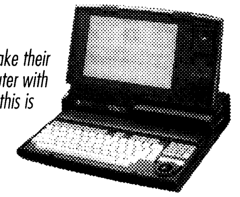

The STacy is extremely popular among musicians who need to be able to take their show on the road, but anyone can enjoy its simplicity. It's a full-size computer with a full size keyboard and trackball. If you've ever considered a portable ST, this is the machine for you.

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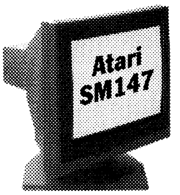

Through a special purchase, we have a limited quantity of these monitors NOW, but they will be available for a limited time only. While the SM147 has no internal speaker, it is a natural for musicians, especially those working with MIDI sequencers and scoring programs on the ST. The 14" diagonal screen of the SM147 is easy on the eyes. These sell quickly – order yours while you can!

Atari SM147 Monochrome Monitor – Just $189.00!

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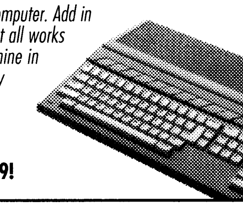

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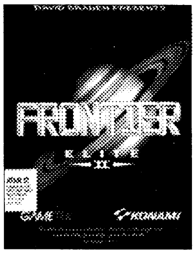

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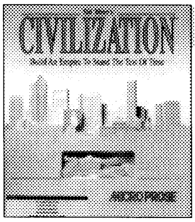

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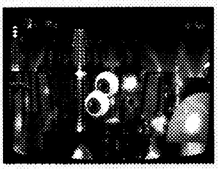

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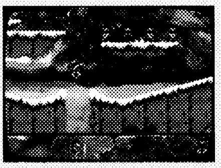

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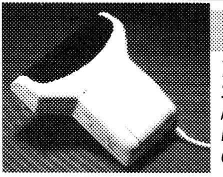

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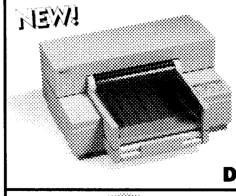

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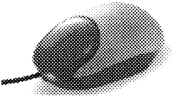

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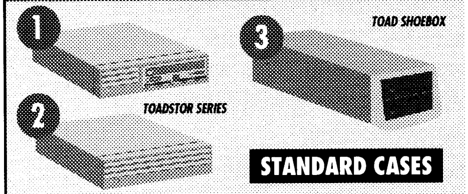

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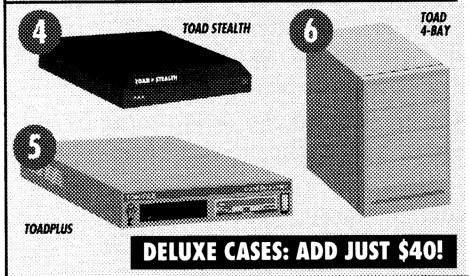

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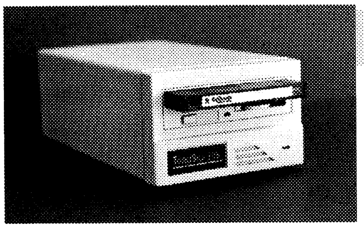

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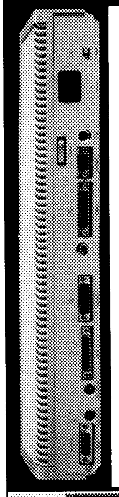

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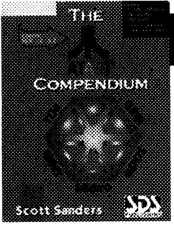
Atari Compendium



The Atari Compendium from SDS Publishing is the most complete programming reference ever assembled for Atari Computers. It's a full 800 pages about all aspects of the operating system – as well as solid hardware information. But it's not just for programmers! There's information every Atarian can use, including character maps, hardware specifications and more!

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8 Bit Tidbits

by Rick Reaser

XE Touch Keys

Since last month, I've installed my new XE Touch Keys from Best Products. As I mentioned last month, the price of this item was cut in half, which really coaxed the sale for me. I thought I'd tell you a little bit about my impressions after doing this issue of *CN* with the mod installed.

I was a little surprised how small the package was when I got it. I thought, "Good things come in small packages (I hope)." The cellophane bag contained 62 pink rubber suction cup things about the size of a single "Smarty" candy.

Installing the mod was easy. I just removed the four screws from the bottom of my 130XE and took off the top of the computer. The keyboard is attached to the motherboard with a mylar ribbon cable, which I left plugged in. Next, I removed the 18 tiny Phillips screws from the keyboard assembly and removed the back metal plate. This revealed a mylar sandwich with metallized traces in it. You replace the old suction cups with the new pink ones and screw it all back together. The whole operation took about 5 minutes. Instructions come with the kit.

I had one key that was sluggish after I had everything back together. After switching around several times, I concluded that the new pink suction cup was defective, so I left an old style suction cup under my Atari key. I'll mail back to Best for another one later. In the meantime, I have an easy way to compare the "feel" of my modified keyboard. There is a big difference when you push the keys, side by side.

So, what is it like? The keyboard is a lot "firmer" now (harder to press the keys). There is a little "click" at the bottom of each keystroke, which gives a more positive feel. On the old keyboard, the further you pressed a key, the harder you had to push. It really was like typing on a sponge. I do think my hands get a little more tired after long stints of typing, but I seem to feel more confident and actually have fewer typos.

Bottom line? Well, I still think my vanilla 800 has a better keyboard. But, for the new reduced price, XE Touch is worth the money if you hate your 130XE keyboard.

Elsewhere in This Issue

With our new 64-page format, we didn't have room for that excerpt from the new XL/XE memory mapping book from England last month, but we do have it this month. The book is still projected to cost 14.95 pounds sterling. I picked up several interesting insights just from this short excerpt. I hope you do, too.

Our prolific Atarian from Florida, Frank Walters, changes pace with an exhaustive review of a brand new program for the Atari 8-bit, *Atar-Z-Modem*. Yes, there is now ZMODEM downloading for the Atari Classic. Frank also gives us some background and insight on various modem protocols out there and points out that ZMODEM may be more hype than help.

Product Announcements

In the future, I'm going to start to put the product announcements up in the front of the magazine in the "AtariIndustry News and Announcements" section. This will give me more room and will force some of you die hard 8-bitters to explore other sections of our fine publication.

The other thing I would like you vendors and developers to start doing is sending me news releases. The way this is working now, I call everyone and pick their brains. Now that I have a "real job," you could help me out and send me an e-mail when you have news or new products. Then, we will run it in the front of the magazine with the rest of the things like that. So, help me out, guys. This applies to new shareware items as well.

This month, there should be some more info on *PC Xformer* and *Fine Tooned Engineering* up in the front part of this issue. Here are a few additional tidbits about those two items.

The shareware mentioned in Fine Tooned Engineering's announcement is available on both GEnie and CompuServe. Darek Mihocka brought a demo version of *PCX* to the Sacramento Show in March. Bob Woolley was there and, between the two of them, they were able to get the program to work with SIO2PC. Now, turn to the front of the issue for the rest of the story.

FidoNet Update

After some intervention from the Atari 8-bit National Echo Moderator, Larry Black, we now have the echo here in Los Angeles. It's only been going for a few days now, but it is nice to be back "on the feed."

There are a lot of new faces in the echo and I will be starting the task of figuring out exactly which BBSs are actually supporting it. I'm on node 1:102/137.0, PC Heaven BBS, (310) 374-7929. The SysOp, Tony Reeves, is an 8-bitter from way back and I'm so happy that he remembered his roots and plugged me in. Stay tuned for more on FidoNet next month.

Comp-Sys-Atari8

Thanks to Mike Todd (and Mike Jewison), the crosspost of the Info-Atari8 Digest from UseNet to Internet has resumed. Now that I have direct access to the Internet, I have been able to participate. Most of the people in the newsgroup are different from the ones on GEnie, CIS and FidoNet, so I've met quite a few new people. I even met an 8-bitter who lives about a mile away and works a block from my house! Small world!

My general impression of the newsgroup is that it is very hardware oriented. There is also a lot more philosophizing than on the other nets. Anyway, I'm hooked in now and will be seeing you on that particular branch of the Information Super Highway in the future.

GEnie News

Craig S. Thom has been faithfully putting the Info-Atari8 Digests into the Library, now that that has restarted. That has been the main activity in the library since my last column.

After a prolonged absence, I finally made it to the Thursday night Real Time conference. I was 45 minutes late and there were still six people there. We had a lively discussion and I recommend that you drop in sometime. It's really worth your time (and money).

Several software projects are still percolating along with the GEnie crowd. Clay Halliwell is still tweaking *FlickerTerm 80* (*FT80*). This is one of the most talked about terminal programs around, even though it isn't ready for public consumption, yet. Clay sent me a Beta version a few days ago and I haven't had a chance to UNARC it. If Clay lets me, I'll share my impressions of it with you next month. I still want a real person to write a real review when the thing finally comes out.

Jeff Williams stated that he has now posted the last Beta version of *Djinni*, the 8-bit Alladin program for GEnie. I'm not sure if that is because he's really done, tired of working on it, or ran out of letters in the alphabet. Seriously, I've never seen anyone work harder and encounter more frustration with a project. Jeff gets the "Mr Persistence Award" for hanging in there. I'm looking for someone to write a full-blown review of this program as well. The Beta versions I tested were pretty slick.

CompuServe News

Things have slowed considerably on CIS since the merger of the 8-bit Forum with the Atari Game machines. There has been a lot of discussion lately regarding the "purging non-accessed files policy." It's fun to see the enthusiasm among the Jaguar owners who share a few of the same message bases as we 8-bitters. It's also neat to see several of the "official" Atari Corp guys join in the strings. I hope the 8-bit activity picks up soon.

Atari Classics to Stop

Managing Editor, Ben Poehland announced that *Atari Classics* (*AC*) will stop publishing under his editorship after the April issue. He cited insufficient subscribers as the reason. There is some discussion as to whether someone else will restart or continue the magazine, but nothing is firm as of this date. Ben has discussed the possibility of refunds for current subscribers. *AC*'s February issue has experienced considerable delay and will contain detailed information on the demise of *AC*.

TextPRO 5.1 Beta

To end on a happier note, I spoke with Ronnie Riche tonight after getting a hot tip from Mike Todd. After a long hiatus, Ronnie mailed out *TextPRO 5.1* to registered owners, sans documentation. Mr "Behind-the-Scenes," Mike Todd, lent Ronnie the requisite equipment to get the project back on track. (Thanks again, Mike!) Ronnie hopes to have the project completed by the end of June. Yours truly and Frank Walters will be cleaning up the documentation and Jeff McWilliams is toying with the idea of making a printed manual available for the finished program. This is really great news and I will have more to say about it next month.

I have a lot of good material from other people in this issue, so I'm going to keep things short. That's all for now. You can contact me via the snail mail or e-mail addresses at the front of the magazine.

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Extracts from

The New Atari XL/XE Memory Map Book

by Andrew C. Thompson

[Editors Note: This extract first appeared in Issue 65 (Nov/ Dec '93) of New Atari User. Reprinted with permission.-RR]

Hi there, and welcome to a few short extracts from the new programming book being created for your XL/XE. The book is heavily based upon **Mapping the Atari-REVISED** by Ian Chadwick, but it has corrected most (perhaps all) of the incorrect information and errors from the book. In addition, there is a fair bit of information that is just not covered in **Mapping** which *is* covered in my book. Inclusive of the MAP section, you'll find an XL/XE Operating System source listing with descriptive remarks alongside. There are also several (!!) appendices that I've included for the simple reason of reference and knowledge. Most information in the MAP section that normally references other sources in Mapping, you'll now find included in my appendices.

Unfortunately, the book hasn't been completed in time for this computer show, which would have been nice, but I do hope to have it ready before summer (if all goes ok). The name and price of the book haven't been invented as yet, but who cares! Keep in touch with *TWAUG* or *Page-6* [or *Current Notes*] and you should find out soon enough.

Well, without further ado, let us embark on a few extracts I've promised you.

GRAPHIC	ROWS		COLUMNS	BYTES	SCREEN	DL
MODE	full	split	/line	/line	MEMORY	MEMORY
0	24	20	40	40	960/960	32/na
1	24	20	20	20	480/640	32/34
2	12	10	20	20	240/400	20/24
3	24	20	40	10	240/400	32/34
4	48	40	80	10	480/640	56/54
5	48	40	80	20	960/1120	56/54
6	96	80	160	20	1920/2080	104/94
7	96	80	160	40	3840/4096	104/94
8	192	160	320	40	7680/7936	202/176
9	192	160	80	40	7680/7936	202
10	192	160	80	40	7680/7936	202
11	192	160	80	40	7680/7936	202
12	24	20	40	40	960/1120	32/34
13	12	10	40	40	480/640	20/24
14	192	160	160	20	3840/4096	202/176
15	192	160	160	40	7680/7936	202/176

As a simple example of missing information from **Mapping**, take the following locations:

```
88,89      58,59  SAVMSC
```

The lowest address of screen memory corresponding to the upper left corner of the graphics/text screen. The upper left corner of the text window is at locations **660** and **661**. You can check this with:

```
10 GRAPHICS 1
20 SCREEN=PEEK(88)+256*PEEK(89)
30 WINDOW=PEEK(660)+256*PEEK(661)
40 POKE SCREEN,51:POKE WINDOW,55
```

How is each mode configured? Well, take a look at the chart overleaf. Note that the 1st number in the Screen memory is the amount of memory actually needed, where the 2nd number defines the amount set aside due to handler calculations and boundaries. The 1st DL number is the amount of full-screen instructions, the 2nd being the split-screen amount. When the screen clear function is executed the display handler clears the memory between the address given by **SAVMSC** and **RAMTOP**. The old-bug of RAM being cleared above **RAMTOP** with the Screen-CLEAR function and the scrolling of the text-window has now been eradicated, so feel free to protect RAM directly above **RAMTOP** without any worries of its being lost. **SAVMSC** and **RAMTOP** can also be used in your own programs to clear bulks of memory fast. This is especially useful in clearing PMG's or strings, ie:

```
10 POKE 88,0:POKE 89,40
20 POKE 106,PEEK(106)
30 ? CHR$(125):GRAPHICS 0
```

This clears all the memory from location **10240** (40*256) to **RAMTOP-1**. Be sure to call a graphics mode afterwards so the screen write address is returned to normal.

Here's a routine to include in your own programs. It will load a picture file into the Graphics mode in use:

```
10 GRAPHICS 15+16:MEM=7680
20 DATA 104,104,104,170,76,86,228
30 FOR I=0 TO 6
40 READ D:POKE 1536+I,D:NEXT I
50 HI=INT(MEM/256):LO=MEM-HI*256
60 OPEN #1,4,0,"D:FILENAME.PIC"
70 POKE 849,1:POKE 850,7:POKE 852,PEEK(
88):POKE 853,PEEK(89)
80 POKE 856,LO:POKE 857,HI:POKE 858,4
90 X=USR(1536)
95 CLOSE #1
```

If you wish to save the picture to disk, then you'll... With a little interruption, ain't I a spoil sport. You'll have to see page 17 of the book, where you'll also find additional instructional information – FOR ALL PROGRAMS.

As you can see, all of the XL/XE graphics modes are covered here. There are various other locations throughout the book that also support all 16 modes, of course. Another point of the book is where I've clarified explanations with excess program listings, such as:

186,187 BA,BB STOPLN

This is the line where a Basic program stopped either due to an error or the use of the Break key. Also due to a Basic **STOP** or where a **TRAP** statement occured. Try the following:

```
10 TRAP 30
20 ;this is a deliberate error
30 LINE=PEEK(186)+256*PEEK(187)
40 ? "Are you aware of error ";PEEK(19
5);" at line ";LINE
50 TRAP 40000
```

I believe that subjects are best explained with small straightforward Basic programs, rather than complex, badly written paragraphs of the British language. The **TRAP 40000** statement above simply turns off the Error TRAPping mode.

How about subjects that you don't see in the majority of manuals? Well, good fortune has come your way because here is a description of the hardware timers. When were these last detailed!?

The HARDWARE-TIMERS are used to count intervals in less than a jiffy (1 fiftieth of a second). They count down from a user set value until they reach 0, whereby they vector to the appropriate address. These are very handy for many applications, including music durations, game I/O clock, colour alterations, timing and even digitized speech (see the VOLUME-BIT appendix). Oh dear, I've told you one of the appendices in the book.

Here's a program that uses hardware timer–1:

```
10 POKE 53768,0
20 FOR I=0 TO 12
30 READ D:POKE 1536+I,D:NEXT I
40 DATA 173,10,210,41,240,141,10,212,1
41,24,208,104,64
50 POKE 528,0:POKE 529,6
60 POKE 53760,30
70 POKE 16,193:POKE 53774,193
80 POKE 53769,1
```

It's nice and easy when you see the Basic program that performs the task, isn't it? Here are the steps to creating one yourself:

1. **POKE AUDCTL** with the clock frequency you wish to operate in: 0=64KHz, 1=15KHz and 96=1.79MHz. The PAL system actually works at 2.217MHz, but it seems that POKEYs IRQ' are strapped to this strict timing circuit! (It doesn't seem possible to disable POKEYs internal clock for faster processing IRQ'!??).

2. **Mapping** says to set the channel control register at **53761**, to what and why it doesn't say, but when I was fiddling around with it I found that it has no use at all!

3. Place your machine-language interrupt routine into a safe place of memory making sure it ends with a **PLA** and **RTI**. Note that if you use the **X** or **Y** registers then you should **PHA** them and restore them at the end of the interrupt.

4. Address your routine with the appropriate Timer-vector.

5. **POKE** a value between **0-255** into the relevant **AUDF** register. This is the delay (in clock-pulses) before the interrupt routine is re-executed. You should be very careful with this value because if it is shorter than the amount of time your interrupt-routine needs to fully execute then you are dicing with trouble. The system can CRASH.

6. Enable your interrupt by setting its bit in **IRQEN** at **53774** and its shadow **POKMSK** at **16**.

7. Finally, **POKE** a non zero value into **STIMER** at **53769** so that your counter (the **AUDF** register) is reset to the value you poked here in step 5.

I wasn't going to include these steps in this extract, but because IRQs are a less known feature of the Atari, I have.

Moving onto another subject and, indeed, another set of locations, we have:

675-689 2A3-2B1TABMAP

Map of the TAB-stop positions. There are 15 bytes (15*8 = 120 bits), each bit corresponds to 1 column in a logical line, where a value of 1 means the TAB is set and a 0 means otherwise. If you wish to clear all the TAB stops, then you can either poke all these locations with 0 or press the TAB key to land on each tab-stop and press CTRL+TAB, likewise, if you wish to create one, then position the cursor where you want the tab-stop and press SHIFT+TAB (or POKE the appropriate bits in). Try the program on the next page.

```
10 DIM C$(8)
16 DATA 128,64,32,16,8,4,2,1
22 FOR I=1 TO 8
28 READ D:C$(I,I)=CHR$(D):NEXT I
34 FOR J=1 TO 15
40 POKE 675+(J-1),0:NEXT J
46 FOR TAB=1 TO 120 STEP 3
52 GOSUB 70
58 NEXT TAB
64 STOP
70 BYTE=(TAB-1)/8
76 BIT=((BYTE-INT(BYTE))*8)+1
82 V=ASC(C$(BIT,BIT))
88 BYTE=INT(BYTE)
94 POKE 675+BYTE,PEEK(675+BYTE)+V
98 RETURN
```

You can use this program to set any TAB positions you wish. The **GOSUB** routine between lines **70 - 98** actually sets any TAB-stops given to it by the **TAB** variable (columns are between 1 – 120).

How about those 9 sector disk fonts etc. that various character-editing packages load and save. Hmmm, that particular routine to save your font is:

```
0 DATA 104,104,104,170,76,86,228
1 FOR I=0 TO 6
2 READ D:POKE 1536+I,D:NEXT I
3 OPEN #1,8,0,"D:NAME.FNT"
4 POKE 849,1:POKE 850,11:POKE 852,0:PO
KE 853,PEEK(106)
5 POKE 856,0:POKE 857,4:POKE 858,8
6 X=USR(1536)
7 CLOSE #1
```

With this program, taken from page-79, having created a font in Basic, you can save it to disk as a 9 sector font file. If you'd like to load it back in, then see page-80. Darnations, ain't I a spoil sport.

A nice subject that isn't made clear much is calling graphics modes in machine-language. It's all done with **CIO**, just set the various parameters, **JSR** to **CIO** and there you have it. Well, you could create your own Display List (DL) and change the DL pointer at locations **560** and **561**, but that's the cowboy method. I certainly don't do it that way...NOT! Hmmm.

```
10 DIM A$(32)
14 A=ADR(A$):H=INT(A/256):L=A-H*256
20 FOR I=1 TO 32
30 READ D:POKE A+I-1,D:NEXT I
50 DATA 112,112,112,66,64,156,2,2,2,2
60 DATA 2,2,2,2,2,2,2,2,2,2,2,2,2,2,2
70 DATA 2,2,2,2,65,0,0
80 POKE A+30,L:POKE A+31,H
90 POKE 560,L:POKE 561,H
```

Don't copy me, here's the PROPER method:

```
0100            *=$600
0110 ;
0120 CIO     =   58454
0130 COMMAND =   834
0140 BUFFER  =   836
0150 AUX     =   842
0160 AUX2    =   843
0170 ;
0180         LDX #32
0190         LDA #3          ;OPEN
0200         STA COMMAND,X
0210         LDA #24         ;CLRSCRN
0220         STA AUX,X
0230         LDA #8          ;MODE
0240         STA AUX2,X
0250         LDA #NAME&255
0260         STA BUFFER,X
0270         LDA #NAME/256
0280         STA BUFFER+1,X
0290         JSR CIO
0300         BRK
0305 ;
0310 NAME    .BYTE "S:"
```

Who wrote that program I hear you say, can't have been me! Anyway, how about drawing in machine-code? It's nice and easy in Basic because Basic has supplied us with **PLOT** and **DRAWTO**, but for machine-code you'll need the information on page-98 of my book. Shall I give you a clue...? Well, it's all to do with locations **84, 85, 86, 96, 97** and **98**. You might also need a **CIO** code **17**.

Location **54017**; **D303** in **Mapping** supplies a good program that turns your **ROM OS** into a **RAM OS**. Well, how about the internal Basic ROM and the **SELF-TEST** package? Here's a program that will turn your **ROM SELF-TEST** to a **RAM SELF-TEST**:

```
10 DATA 173,1,211,41,127,141,1,211
12 DATA 169,80,133,204,169,40,133,206
14 DATA 169,0,133,203,133,205,160,0
16 DATA 177,203,145,205,200,208,249
18 DATA 230,204,230,206,165,204,201,88
,208,239
20 DATA 173,1,211,9,128,141,1,211
22 DATA 169,40,133,204,169,80,133,206
24 DATA 169,0,133,203,133,205,160,0
26 DATA 177,203,145,205,200,208,249
28 DATA 230,204,230,206,165,206,201,88\
,208,239
30 DATA 104,96,-1
40 I=0
50 READ D:IF D+1 THEN POKE 1536+I,D:I=I+
1:GOTO 40
60 X=USR(1536)
```

Occupied **SELF-TEST** memory is locations **20480-22527**; **$5000-$57FF**. You can also do the same to the Basic ROM with this program, as described earlier, but you'll have to see location **54017** for the modifications.

Another subject in the book, which I believe has not been described in any other source to date, is that of the **SPLIT-FONT** mode. A very powerful technique that I discovered originally some years ago, i.e.:

```
10 GRAPHICS 0
20 DL=PEEK(560)+256*PEEK(561)
30 POKE DL+3,2+32+64:POKE DL+7,2+32
35 POKE DL+9,2+32
40 POKE 54277,4
45 ?
50 ? "Y+fa+/2*E*F3SHMSSkYYA011QK4/H"
60 ? "sX[OTD/xCIEOsLWDOLZ7A#1T&044P"
```

I'm not going to tell you what happens; just type in the above program and RUN it up. My book doesn't really go into what you can do with this new mode, but I'm sure the possibilities are endless. Italicization can be achieved by including **HSCROL** on one of the lines.

That covers just a few of the many pages within the MAP section of the book; of course, every independent memory location has been described. Amongst the appendices in the book, there are descriptive tables detailing memory usage of graphics modes and their DLs, detailed timing considerations for both the PAL and NTSC systems. Various reference appendices including Basic keywords, Turbo Basic keywords, character-codes, system errors, etc.. There are a few fully explanatory appendices on subjects such as Display Lists (DLs), Display List Interrupts (DLIs), Vertical Blank Interrupts (VBIs) etc.. Other varied appendices include information on PMGs, the BOOT process, 130XE memory management, LSBs and MSBs, Boolean programming, Boundaries, POKEY in STEREO; the list does go on.

If you're a music fanatic, then you'll find a fairly powerful Turbo Basic program in the relating appendix that will allow you to create substantially good quality Basic music. The program itself is only 20-25 lines, but believe me, it can accomplish many aspects of channel and timing control. Also, a good point you'll find about it is that the amount of data needed for complex tunes is very small compared to many simple music routines.

If you're searching for all that information that stops you from writing your own programs to a boot-disk, then consult the BOOT appendice. The CYCLE-STEALING appendix will be useful to more advanced programmers, and, indeed, the MACHINE-CODE reference appendix. Here, advanced programmers will find some information not listed anywhere before in any book or magazine (as far as I know). The nearest I've seen to some of this information was in an issue of *MEGA MAGAZINE*, an excellent resource for programmers. There was an article on ILLEGAL OP-CODES, but it missed out on some important information. You'll have to see my book for further details.

DOS 2.5 users will be happy to see a COMPLETE list of correct routine addresses, inclusive of DOS 2.0. **Mapping** gave a good list for 2.5, but it was not as complete as DOS 2.0. The 130XE memory management appendice in **Mapping** I thought was hard to understand, so after many hours of working out how the 130XE does this, I've tried to give a clearer explanation. Another means of reference is the appendix of FREE BYTES inside your machine. Here's a detailed description of every free byte you can use, depending on the programming environment you're in. Two very informative appendices you might find deal with graphics MODES and in specific, graphics modes 12 and 13. A good use for graphics mode 12 is the classic game *Boulder Dash*, but more about that in the book.

As explained earlier, DLs, DLIs and VBIs are covered in the book. These are three very important subjects for programmers wishing to improve the quality of their programs. The DLI appendix brings its power to the average Basic programmer; it's more like a tutorial than anything else. Inclusive of this, there's an additional few pages on overcoming problems with DLIs, that will help you get rid of unwanted glitches etc..

Anyway, on that note I'll bring this extract to an end, but just before I do, here's my final say.

Really, I shouldn't say anything about the book, should I? I shouldn't say this gives this, says that, or anything. The true thing to do is just to say that it *will* be of use to all levels of programmers, and of *invaluable* reference, but what response would the Atari Classic machine receive if I did do it that way. Not one person, except myself, would realize that this book might be just what he/she wanted to advance his/her programming. This book includes a vast amount of correct information in one source. ALL other sources of any quality and accuracy are OUT OF PRINT, so is that going to happen to this one? If there is any incorrect information in this book, then I urge you to contact me, so that we can replace the faulty page. This book may be *the* book of reference, as was the original **Mapping the Atari** in its day. For this reason, I don't want to charge the earth for the book when it is finally completed. A producing cost, a small amount to subsidize TWAUGs further commitment to the Atari and a little for my own interest in commitment. "BUY THE BOOK, YOU WON'T REGRET IT!"

[For further information, please contact: TWAUG, P.O. Box 8, Wallsend Tyne & Wear, United Kingdom NE28 6DQ.]

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Goodbye
ATARI Computer
Rest In Peace

Larry Black's *Atar–Z–Modem*

ZMODEM Receive for the Atari 8-bit

Review by Frank Walters

A Brief History of Modem Protocols

Atari was one of the earliest computers to use XMODEM error-checking protocol, developed by Ward Christensen for CP/M computers. In the early 1980s, many terminal and BBS programmers wrote XMODEM protocols that did not follow the correct standards set by Christensen, which resulted in a bad reputation for the standard XMODEM protocol among users. Until Trent Dudley released his AMODEM 7.xx series of terminal programs, I had not found a single Atari program that followed the exact XMODEM standards. Programmers had a tendency to copy the protocols as written by other programmers, rather than using Christensen's original rules.

XMODEM CRC was supposed to be an "improved" version of XMODEM that used a two-byte checksum for "more reliability" than the one-byte checksum used in the original. In actual fact, XMODEM CRC is slower, in every case, than standard XMODEM. This is due to the more complicated algorithm used in calculating the 16-bit checksums and the addition of a single byte to each block of data. Reliability was not improved because of the CRC checksum, but rather due to the fact that programmers were following the protocol more closely than they did with standard XMODEM, which got a bad rap in the first place.

Then came 1K-XMODEM (sometimes called YMODEM), which was XMODEM CRC with 1024-byte blocks instead of 128-byte blocks, and using the same CRC checksum computation. True YMODEM followed, which was simply a "batch" transfer using a 128-byte block to send filename, size, time/date stamp, etc. and then 1K-XMODEM to send the file. The problem with YMODEM and 1K-XMODEM was, when an error occurred, the entire 1024-byte block had to be re-sent. A single byte error could make 1K-XMODEM or YMODEM slower than 128-byte data block XMODEM, which would only have to re-send a 128-byte block. In any event, all of these protocols, when correctly programmed, are extremely accurate in transferring files over a modem.

Numerous other fringe protocols were developed by other programmers hoping to become famous, perhaps. They were usually adaptations of the block transfer protocols that descended from Ward Christensen's original XMODEM. They never got widespread acceptance among the Atari telecommunication users, probably because they were not really an improvement and were not widely available on bulletin boards or terminal programs.

The block size protocols are especially useful to Atari users because of the limitation on the 8-bit operating system. In order to write the data to a disk file, the RS232 channel (R: device for modem) has to be closed before disk input or output can occur. Attempts to use simultaneous disk and modem I/O will result in an error due to design of the operating system.

Meanwhile, the error-correcting modems began to appear on the market. Error-correcting modems made the use of checksums redundant. However, everyone doesn't have MNP or v.42 (or whatever) modems, so checksums are still with us. The IBM and its clones do not have the restriction on disk I/O like the Atari. They can receive data and write to disk at the same time. So the transfers are not slowed by disk-access times. We Atarians found that saving files to RAMdisk greatly reduced our on-line time during file transfers. And ARC files could be uncompressed from RAMdisk to real disks once we were off-line.

Then along comes ZMODEM. Many Atari users traded "down" to PC type computers and discovered ZMODEM was the current rage. They were astounded by the speed of transfer, which was essentially a continuous stream of data with no pauses for block sizes. They bragged to their old friends about how antiquated the Atari is with its nearly extinct dinosaur, called XMODEM. What most of them experienced was delusion. When they bought their PCs, they also bought their new 9600+ baud modems. Hence, the increase in speed of file transfer. What they also bought was humongous file sizes, up to several megabytes for a single file. It wasn't ZMODEM that led to the blazing speed of transfer, but rather the higher speed modems, with self-correction for errors. Thus, no data had to be repeated and they could save to disk or hard drive without stopping the flow of data.

Atari still has to stop the data stream in order to save the data to disk or ramdisk. If you use an error correcting modem with your Atari, and the other party uses a matching system, then you won't experience repeated blocks of data either.

Putting ZMODEM of the Atari 8-bit

In spite of the "facts" related above, there is still a groundswell of demand for ZMODEM for the Atari, nearly all of it based on the delusion handed down by their IBM-clonophile friends. So, in the Fall of 1993, Larry Black decided to tackle the problem just to see if it could be done. He asked my opinion of the idea, already knowing my disdain for protocol fads. Surprising him, I agreed that it sounded like a very interesting project and, if successful, it would be well received by the Atari orphanage population. He and I both thought it would be extremely educational. He has owned an

Atari for many years and used to program machine language routines by poking around in memory, long before he ever bought an assembler. He later got an IBM clone and now runs a FidoNet BBS, connected via null modem cable to his Atari 130XE with his Mac/65 nearly welded into the cartridge slot. So, he had all the tools to tackle the project.

Atar-Z-Modem is the result of Larry's persistence. He started with the text description of ZMODEM, written by Chuck Forsberg, who was the original developer of ZMODEM. Larry did not use source code for reference, since most of them are in "C" language. He programs mostly in Assembly for both the clone and the Atari.

The first major disappointment was that ZMODEM is implemented differently on nearly every BBS and terminal program available. Deja vu. That's right. They are doing to ZMODEM what the early programmers did to XMODEM. Everyone seems to be putting his own twist on it. You program for one sender and find another sender won't work properly. Since few users understand ZMODEM (including myself), few complain about it.

In Larry's opinion, *BobTerm* (by Bob Puff) is the definitive terminal program for the Atari. Therefore, he designed his ZMODEM to be used as an external protocol, in conjunction with *BobTerm* as the main terminal. All the features of *BobTerm* are available until ZMODEM is selected for download. You Quit to DOS from *BobTerm*, and binary Load Z.COM (preferrably from RAMdisk). It has a no-frills terminal mode to allow you to operate on-line with the other system until ZMODEM transfer is completed. That's it. It has a terminal mode and a transfer mode. There is a Help Menu with limited functions, such as disk directory and listing of key commands. The idea is to have a small program and as large a buffer as possible.

Setting Up Defaults

The configuration file with Z.COM is called ATZMODE.CNF and is a simple text file. You type in the desired defaults with a text editor and save it back to disk. Items you can set are Baud, Translation, Duplex, Auto Zstart ON/OFF, Overwrite filename ON/OFF, buffer size in 1K increments, download drive number and dev:filename of RS232.COM handler, if required. ATZMODE.CNF must be in drive 1 for most DOS or the default drive for Spartados X and Mydos. The documentation explains how you can modify the Z.COM program to load the CNF file from any drive number other than D:.

Handlers

Z.COM has the same handler requirements as *BobTerm*. If you require an RS232.COM disk handler for *BobTerm*, then Z.COM uses the same one. Otherwise, *Atar-Z-Modem* will install the 850 Interface ROM handler just like *BobTerm* does. It unlinks it when quitting to DOS and re-installs it, as necessary. This is no simple task, as anyone familiar with the quirks of the 850 handler will explain. Unless you can trick the 850, it will normally not allow its ROM handler to be installed more than one time. Bob Puff was the first one to figure out how to do this and Larry Black is probably the second. Another bonus for 850 users is that Larry programmed a larger modem input buffer near the top of memory: about 350 bytes instead of the default 32-byte input buffer.

During testing with a borrowed 1030 modem, it was found that the modem disconnected (NO CARRIER) whenever the XM.COM handler was re-installed after exiting to DOS and loading Z.COM. This appears to be a problem with the handler, rather than either *BobTerm* or *Atar-Z-Modem*.

Atar-Z-Modem Displays

The first thing Z.COM does when you load it is look for the configuration file to find the location of the disk handler file, if one is required. It then loads the handler and installs it, leaving you in the terminal mode. There are two status lines, similar to *BobTerm*. The top one reads something like this:

```
O|Full|Ascii|2400|Atar-Z-Modem|29696:Buf
```

A word about the "O" function. Overwrite ON means that Zmodem will overwrite any filename already on the designated receive disk if it is an exact match for one of the filenames being received. If Overwrite is OFF (blank), then the new file is skipped if it matches a filename already on the disk.

"Full" or "Half" duplex; "Ascii" or "Atari" translation; "2400" or other baud rates from 300 up to 19200. "29696:Buf" buffer size is exactly divisible by 1024, in this example: 29K. Minimum is 1024 and maximum is variable, depending on your DOS configuration, based on MEMLO (low memory) pointers.

The second line of the header reads:

```
A|D1: |‹HELP›‹Shift_Ctrl_Space›=Commands
```

The "A" indicates that Auto Zstart is in effect. I guess I should explain. With Auto Zstart ON, you do not have to press any key to begin transfer. File transfer begins automatically when the sender is ready to begin. If the "auto" box is blank, you begin transfer just like *BobTerm*: press the [SELECT] console key. The next box indicates the current Receive drive number. You can change the download drive number with [SHIFT_CTRL] and the number key for the desired drive.

[HELP] key or [SHIFT_CTRL_SPACE] will page-flip to the Help menu screen. Here are the [SHIFT_CTRL] keys you can use in the Terminal mode:

SHIFT_CTRL	Function
D	Duplex (Full/Half toggle)
F	Translation (Ascii/Atari)
O	Overwrite filename ON/OFF
Q	Quit to DOS
S	Speed (Baud 300 to 19200)
= (dn)	decrease buffer size 1K
- (up)	increase buffer size 1K

1-9	Receive to drive D1:-D9:
0	Receive to default D:
[RETURN]	Auto Zstart ON/OFF toggle
[SPACE]	Commands List [HELP] menu

Only from the HELP Menu can you access the disk directory function, using keys 0-9. Pressing 0 reads directory D:\*.*, the default drive for Mydos and Spartados X, or drive 1 for other DOS.

CONSOLE KEYS:

[HELP]	Commands List HELP Menu
[SELECT]	Begin File Transfer (if Auto Zstart is off)
[START]	ABORT File Transfer
[OPTION]	not used

How to Use Atar-Z-Modem

It is really simple. Use *BobTerm* as your terminal program with all its features, such as dial menu, macros, auto log-on, word-wrap, capture, etc. If you desire to download a file using Zmodem protocol, then designate the file or files you wish to download from the sender's menu. At any point in the process, you may switch from *BobTerm* to *Atar-Z-Modem* by selecting [Q]uit to DOS from *BobTerm's* Command Menu. Load Z.COM from DOS. Make sure you are at the correct baud rate and translation when the *Atar-Z-Modem* defaults are loaded from the configuration file. Continue where you left off when you exited from *Bobterm*. If you had already activated the Zmodem send from *Bobterm*, then Z.COM will either automatically begin receiving the file(s) or you press [SELECT] to begin file transfer if Auto Zstart is off.

It is important that you have pre-set the destination drive number. Since Zmodem is a batch transfer, it would be too easy to fill a disk with files, causing a disk-full error. Make sure you have sufficient free sectors on your save disk for the files you have selected for transfer. Changing destinaton drive is done by simply pressing [SHIFT+CTRL] and the desired drive number. It can be done at any time PRIOR to file transfer, from either the Help screen or the Terminal screen.

File Transfer Display

When file transfer begins, most of the screen will blank except for a few lines at the top of the screen, indicating status of transfer.

Dev:Filename and file size are displayed on the first line of the File Transfer screen. The next line has "Stat:" "Pkt Len:" and "Rcvd:"

"Stat:" displays any number of "status" keywords, telling you what is going on. Here are just a few of the most common ones:

Zinit — initializing at start of each file, receiving filename, file size, etc.

Zack — Acknowledge (ack)

Znak — Not acknowledge, normally an error during Zinit block.

Zrepos — Reposition string to tell sender where to begin resending data, normally after a disk save or CRC error.

Zdata — file data is being received. Following the "Zdata" display is a single space that echoes the bytes of data as they are being received. This is just to let you know that everything is working, especially if you have a modem that does not have status lights such as "RD" for receive data.

Zsynch — synchronize is actually a purge of incoming data until the sender stops the stream so a Zrepos command can be sent back to resume data flow. This occurs when receiving from a sender that ignores the buffer-size request from the receiver. In this case, Atar-Z-Modem will send a stop signal (two CAN) before dumping the buffer to disk. If sender has a large modem buffer, it may still be spewing the contents of its buffer when you are ready to resume the next segment of the file. Zsynch purges the extraneous data until the sender stops.

Zferr — is followed by error number, i.e. Zferr162 for disk-full error.

Zfinish — end of file.

There are numerous others, including Zabort, Zskip, etc. but you get the idea.

"Pkt Len:" is the length of each "packet" of data. <256 means less than 256 bytes between checksums. Maximum length depends on baud rate and frequency of CRC errors encountered. Normally, 1024 byte packets are maximum at 2400 baud or below. I don't have 9600 baud, but I think 2k is maximum packet length at higher speeds. Do not confuse Packets with "Blocks" since packets do not stop for acknowledgement. They merely indicate how many bytes of data are being sent between checksums.

"Rcvd:" is the number of bytes actually saved to disk. It updates each time a buffer dump to disk occurs. Compare it to the bytes in the file "Size:" block to see how much progress is being made.

Variable Buffer Size

The maximum buffer size is dependent on the user's DOS memory configuration. It automatically adjusts to low memory (MEMLO) pointers as it loads. The user has control over buffer size anywhere between maximum and minimum in 1K increments.

While I was beta testing this program, controlling the size of the receiver's buffer was essential in testing and evaluating what exactly was going on with the different implementations of Zmodem on various IBM type systems. I doubt if all the variations could have been detected without this feature. The option to set your own buffer size was left in the program for one primary reason. We have not been able to test this program against every possible variation that the Clonophiles might have dreamed up. Even with a slow 810 disk drive, with write-verify on, it is doubtful that saving a large buffer to disk would take close to the 1 minute timeout limit of Zmodem. However, who is to say that every clone programmer is going to adhere to that limit? It is possible someone will decide that 30 seconds is long enough to wait. So, if you find a certain BBS is aborting on you while you are saving a large buffer, try using a smaller buffer and see what size will work best with your set-up. Just hit [SHIFT+CTRL] [=] or [-] (down or up arrows) to change the buffer size in 1k increments. The default buffer size can be set in the configuration file (ATZMODE.CNF). If you set the default in the config file higher than maximum or lower than minimum, then maximum size will automatically be set.

Resume File Transfer

The "Resume" feature of Zmodem was not incorporated into version 1.0 of Atari-Z-Modem. Resume is where you have not received a complete file for some reason, such as a disconnect or disk full. You can resume receiving the incomplete file where you had left off at some later time. To program this feature for the Atari would probably involve two different methods: for Spartados and all other DOS. The response Larry receives from users of version 1 will determine if he develops a resume function in a later version of his program.

Yes, It Really Works!!

Atar-Z-Modem functions extremely well. It does exactly what it is designed to do: receive Zmodem from an IBM or other type system. It is user friendly and provides more than enough flexibility to work with most 8-bit systems. It does not require any extra memory and works just fine with my virgin Atari 800 with 48K RAM. Its compatibility with BobTerm is outstanding, no surprise since Larry designed it that way.

I tested this program with 6 different Zmodem send protocols, from 300 to 2400 baud. Larry tested it with several other PC terminal program Zmodem protocols and up to 9600 baud, via null-modem. Each send protocol was slightly different in various ways but, in every case, *Atar-Z-Modem* was successful in receiving batch files without errors.

Zmodem is not going to save you any time with an 8-bit Atari, folks! That is simply a statement of fact. I have maintainted this opinion ever since Zmodem began being touted by the IBM-Clonophiles. It has been verified by extensive comparison testing by myself. At 300 baud, don't even bother with it. Use standard Xmodem for the most efficient method of file transfer. Repeat of a 1K block of data at 300 baud is extremely inefficient and time consuming. Greater than 128-byte blocks at 300 baud is wasteful. Up to 2400 baud, Zmodem and Ymodem take effectively the same time. Perhaps at 9600 baud, Zmodem might save some time over Ymodem for the 8-bit user.

Speed Comparison Test Between ZMODEM and YMODEM.

The following identical conditions were present in both downloads:

2400 baud (no error-checking), Atari 130XE and MIO. Batch download three files: 42K, 44K, 17K (104448 bytes in 414 DD sectors). All files saved to newly formatted MIO ramdisk. Timing starts with Press SELECT to begin transfer. Time to Load Z.COM or Receive Y from Bobterm menu is NOT included. Timing ends with return to Term Mode. No errors during either transfer.

COMPARISON	Ymodem	Diff	Zmodem
Buffer size:	11.25K	+11K	22K
BBS Estimate:	7:38	-:14	7:24
ACTUAL time:	7:39	+:03	7:42

The BBS Zmodem supported buffer-size function. This means the receiver tells the buffer size to sender, which stops sending when buffer is full and resumes after receiver saves to disk and sends the resume signal. Because Atari does not support simultaneous RS232 and disk I/O operations, it is necessary to use a variable sized block, depending on memory available for buffer size, rather than the 1K block limit of Ymodem.

NOTE: Some Zmodem protocols on IBM BBS and term programs DO NOT support the buffer-size feature which is part of the original Zmodem specifications. In such cases, the transfer is going to be slower or possibly even fail, depending on what other handshaking has not been implemented.

In the above comparison test, Ymodem was actually faster than Zmodem by 3 seconds (+/- 1 second for fumble fingers on stop-watch). I hate to say this but I can't resist: "SEE I TOLD YOU SO."

In addition, the Atari files downloaded had been previously uploaded via an Xmodem type protocol, thus included padding bytes saved in the file on the PC's hard drive. Zmodem uses no padding so there is no strip-padding routine. Had the files not been Archived, the padding would have to be removed by a utility program before use. So Zmodem doesn't eliminate the padding problem entirely. The Ymodem files had the padding stripped by Bobterm before saving to ramdisk.

More Comparisons

Batch of 8 files, total 73058 bytes at 2400 baud.

COMPARISON	Ymodem	Diff	Zmodem
Buffer size:	11.25K	+10K	21K
BBS Estimate:	5:20	-:10	5:10
ACTUAL time:	5:35	-:02	5:33

One file, 17152 bytes, at 1200 baud.

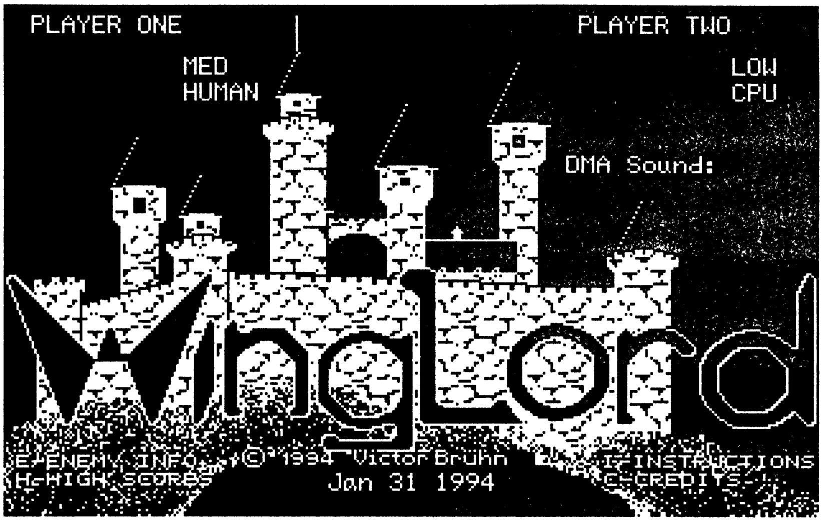
COMPARISON	Estimate	Actual
Standard Xmodem:	3:31	2:40
CRC Xmodem:	3:31	2:41
1K Xmodem:	2:33	2:29
Ymodem:	2:33	2:31
Zmodem:	2:26	2:37

(Continued on page 45.)

Winglord

Good Graphics, Wonderful Sounds, and Great Gameplay!

Review by Scott Tirrell



Recently, I had the opportunity to download *Winglord*, a shareware game written by Victor Bruhn. This game runs on all Atari 16/32-bit computers in ST low resolution and can be installed on a hard drive.

Deja Vu

Those familiar with Williams' classic arcade game, *Joust*, will feel right at home with *Winglord*. The player controls a mounted knight who rides on a winged pegasus. Flight on the pegasus is controlled via joystick where pushing the stick to the left or right causes the expected result while altitude is a little bit trickier a venture. The fire button controls wing flapping of the pegasus; the more often the button is pressed, the higher altitude your rider will achieve. Very *Joust*-like. However, one clever little feature has been added. When pulling back on the stick while pressing the button, the character will fire forth a missile, which can be used to dispatch certain enemies! The other method of dispatching enemies, as any *Joust* fan knows, is to crash into an enemy at a higher altitude than he is at.

Speaking of enemies, I should take the time to introduce you to them as you'll get to know them all too well in *Winglord*! The Apprentice is the first enemy encountered in *Winglord*. The Apprentice is the run-of-the-mill jouster who has no special abilities and is not too bright. The second enemy, a Yellow Jacket, is a bit more challenging. Yellow Jackets are a little more aggressive than the Apprentices; being below them will usually lead to problems! An added twist is that Yellow Jackets can be killed by the player's missile weapon as they have the ability to use missiles themselves later on in the game. Dark Riders are the third type of enemy in *Winglord* and begin appearing in the teen levels. Dark Riders are capable jousters and possess the ability to fire missiles. This means that missile weapons can be used against them, fortunately. Finally, Wing Masters are the most intelligent of the enemies and, therefore, are excellent jousters. They do not use missiles so they must be taken down through jousting.

I have thus far been harping on *Winglord's* similarities to *Joust*. There are many differences, though, that set *Winglord* apart from its predecessor. Besides the contrasts of the enemies and missile weapon, one obvious difference is in the playing fields. The lava pits of the original *Joust* are gone from *Winglord*. Instead, the bottom is all solid in *Winglord* and one does not have to worry about the old "hand from the lava" trick.

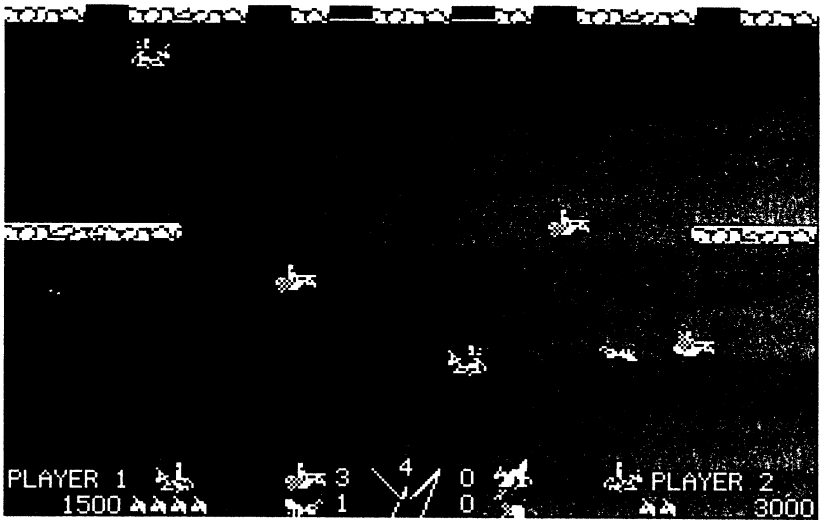
Another difference is that in *Winglord*, everyone begins the level by dropping out of the ceiling as opposed to the "transporter patches" in *Joust*. An even more striking variation is the lack of eggs in *Winglord*. In *Joust*, when an enemy was hit, it released eggs, which the player would then have to pick up before they hatched into new enemies. In my opinion, this added a more hectic atmosphere to the game that was an enjoyable addition to the game play. These differences mentioned, *Winglord* is very closely related to *Joust*.

Winglord Features

The graphics in *Winglord* are very well done. Although I have seen better graphics in an ST low resolution game, the play is the thing in *Winglord* and it more than makes up for anything lacking in the graphics department. The sound is where *Winglord* really shines. *Winglord* uses DMA sound. The author concedes that this means that sounds on a standard ST may be disappointing. On my Falcon030, they are extremely impressive, indeed! Special bonuses are awarded to the accompaniment of energetic electric guitar sounds, enemies are "dismounted" with a satisfying "thud" and missiles scream towards their targets. The sounds add quite a bit to the game play, which is quite rare in an Atari computer game. Overall, *Winglord* is a well-made game that incorporates good graphics, wonderful sounds, and great gameplay to entertain the player. *Winglord* compares very favorably with *Joust* on the Atari 8-bit, one of my all-time favorite games. You will be addicted!

Shareware

Winglord has been released as shareware. The shareware version only contains the first 19 levels. For the complete game, a modest fee of $8 is requested by the author. It is well worth the price.



[*Winglord* is available on the April '94 *CN* Disk-of-the-Month.]

Atar–Z–Modem

(Continued from page 43.)

One file, 22199 bytes, at 300 baud.

Standard Xmodem	14:00	13:06
Zmodem	14:00	13:07

Summary

In nearly every case tested, Ymodem was actually slightly faster than Zmodem. At 300 baud, Standard Xmoddem was 1 second faster than Zmodem, and no errors had occcurred, fortunately. The point is, you now have the option to use Zmodem for download, but don't expect miracles. Most of the hype you have heard about Zmodem is simply B.S. In fact, Zmodem is probably one of the most incorrectly proggrammed protocols since the original Xmodem. With the opeerating system limitations of the Atari, *Atar-Z-Modem* does an outstanding job of adhering to the correct protocol while adjjusting for the whims and ignorance of various IBM programmmers who rushed into uncharted areas in order to include Zmodem in their "latest and greatest BBS program!" Besides, Larry Black's program is fun to use and a change of scenery, so to speak. So use it and have fun with it but don't go spendiing any of that money you plan on saving from your long-disttance phone bills because you now have Zmodem receive cappability.

An explanation for those of you who may already have Atar-Z-Modem while reading this review. The similarity bettween some text in this article and the Doc file is not accidenttal. This review of the program was written before the Doc file and some of the material of this article was incorporated into the final revision of the ATZMODE.DOC file, with the author's permission, of course.

System Requirements

Atar-Z-Modem should run on any Atari computer set-up that will also run BobTerm (850, MIO, Black Box included). It has been tested with various Disk Operating Systems (DOS), including the following: *Atari DOS 2.0s & 2.5; Sparttados 3.2d; Mydos 4.5; SmartDOS 8.2; TOP-DOS 1.5+; Mach DOS 3.7a*. Lock-ups did occur with *SuperDOS 4.4*, for unkknown reasons. In order to get the maximum use from 'Z' as a functional Zmodem protocol, it does use the cartridge area, however. This is the memory area from $A000 to $BC1F. I believe SpartaDOS X users have a 'need to know' of this info.

Availability

Atar-Z-Modem is available on GEnie as file #6858 in Libbrary 8 and named ATZMOD10.ARC. On CompuServe it's in Library 5 as ATZMOD.ARC. The program can also be found, under the name ATZMOD10.ARC on the following BBSs:

T.A.C.O. Bell	904-785-2333 (Atari 4pm-11pm CT)
The Bejue	904-769-9688 (Ascii Fidonet)
221B Baker St.	904-871-6536 (Ascii Fidonet)
Fordham Jesuit	212-579-2869 (Ascii Fidonet)
C.S.S.	716-247-7157 (Atari)
Computer World	716-247-8355 (Atari)
The Moose	716-381-5139 (Atari)

Atar-Z-Modem is shareware so send any/all donations, compliments, complaints and other "hob-knobing" to:

Larry Black (The Bejue SysOp)
2337 Douglas Rd.
Panama City, FL 32405-5902

GEnie® NOTES

by Lou Rocha

I opened the April column by welcoming the return of spring. Then the northeast got hit by two snowstorms beginning on April Fool's Day. This month, I am not going to mention weather at all! In this May installment of GEnie Notes, we continue with some of our new features. Hot Topics looks at some useful ways to improve the use of your Mega STe; Around GEnie visits the Medical and Travel RTs; the Library column focuses on Mouse-Ka-Mania and we have our regular report on the Real Time Conferences.

Hot Topics

by Terry Quinn

One of the nicest computers that Atari ever made has been the MegaSTE. While no longer in production, it is still extremely popular and is still gaining fans. Some of the advantages that this computer has are higher speed (16 Mhz vs 8 Mhz of the original ST) and the ability to use high density drives. The only real problem is that it isn't very obvious how to access these features. Never fear—this is where the BBS service of the Atari RT rides to the rescue.

S.WOLF4 [Sandy] I just set up an MSTE, but have no manuals. I've heard that the speed can be switched between 8 and 16 Mhz. Can anyone tell me how. Thanks.

M.POCHE [Mick] Sandy—As a fellow MSTE owner, I'd be happy to tell ya' how to switch speeds on your computer. Actually, there are several ways. The 'standard' way would be to use Extensible Control Panel (XControl) and the General Setup CPX module. With it you can set the default speed to 8 or 16, and also switch speeds on the fly.

Since the computer actually boots by default at 8 Mhz (for compatibility reasons), I have a nice little program in my AUTO folder to kick it into 16 Mhz first thing. This program is available in the library, along with one to put in 16/No Cache, and one for switching to 8 Mhz. These were written by John Townsend. The best program I have for speed switching on-the-fly is *MHZ 1.1* by DMJ. It allows you to assign a key combination to toggle between 8/16 Mhz using any combination of Control/Alternate/Left & Right Shift keys. This is great if you need to toggle speeds often. This one is also available in the ST Library here.

If you use *NeoDesk*, you can configure it to switch speeds for individual programs, or turn the cache off, etc. Basically, though, you'll probably find that you'll rarely want/have to switch to 8 Mhz, unless you want to play certain games or to view *Spectrum* and *PhotoChrome* format picture files. You might want to do a search in the library under 'Mega STE' or something like that. There are some other speed switching options available here. Hope you enjoy your new MSTE. It's a very nice computer! — Mick

The MegaSTE does have a few quirks, though, when it comes to using High Density. For example, it uses software (not hardware) to check the serial number of a disk to tell when the media is changed. While it generally works well, it does cause a few problems when you try to use pre-formatted media intended for other platforms.

S.WOLF4 [Sandy] Re: "At least I can buy pre-formatted IBM high density floppies, renumber them and. . ." What's this "renumber them" business? I just bought a box of pre-formatted HD disks, but haven't tried them out yet. I thought I would just go ahead and use them, but are you saying this is not the case?

T.DUNBAR2 [Tommy] Sandy—From what I understand, the pre-formatted IBM disks all come with the same serial disk number on the disk, and Atari's get confused because when you do a disk change, they want to see a new number. There's a program in the library called UNEEKIT that easily gives the disk a unique number.

ST.LOU [Lou Rocha] Boy, you learn something everyday here on GEnie! I had no idea about the serial numbers on pre-formatted disks. That simple explanation clears up the mystery I have experienced lately in swapping files to the 486 from the TT!

S.WOLF4 [Sandy] File: 30290 Name: UNEEKIT.LZH Description: This tiny utility can save you a lot of time. With it you can purchase PC pre-formatted diskettes and give each a unique serial number. The ST uses the diskette serial number to detect disk swaps and, thus, your disks have to have unique serial numbers. Now, instead of taking an hour to format that box of diskettes, you can purchase pre-formatted disks and spend only minutes, with *UNEEKIT* giving each a random serial number.

In fact, since the HD floppies seems to be the most problematical feature of the MegaSTE, the BBS seems to be about the only place you can find accurate information like the following post:

M.DRYSDALE [Drys] An Atari Owner's Guide to 1.44 High Density Floppy Disks & Drives.

A few years ago one of the PC mags had a VERY technical article about the differences between 360, 720, 1.2 and 1.44 disks. It delved deeply into magnetism, coercivity, ferrite particles, etc. The well tested (and proven) conclusion was: use a disk the way it is designed to be used; otherwise, you WILL lose data. Maybe not today or tomorrow, but lose it you will.

Punching a 720K disk to turn it into a 1.44 disk is a bad thing. The two types of disks are different in their magnetic properties, and coatings. It is just not a reliable cost savings. It is not the same as when us old 8-bitters used to make 'flippy' disks with a punch.

Parts needed to use a 1.44 floppy on a MSTe or TT:

1. Switchable 8/16 Mhz signal to the floppy drive.
2. AJAX chip.
3. 1.44 drive mechanism.

4a. TOS 2.06 (3.06 on the TT).

4b. TOS 2.05 with the HD cookie (3.05 on the TT).

5. Flip DIP switch #7.
6. ALL OF THE ABOVE!

The pre-production version of the MSTE will NOT use a 1.44 drive. How to tell: there is a chip located between the SIMMs and the Ajax (or WD1772). If it is rectangular, sorry you loose. If it is square and surface mounted, then a 1.44 will work.

If you are still having problems, check:

1. Bad Ajax.
2. Bad drive mechanism.
3. Data cable too close to power cables.
4. Power supply needs middle screw removed.

We recently replaced 720k and 360k drives in old 520 and 1040s with TEAC 1.44 drives. Passed all Atari bench tests as 720K drives. NOTE: They will NOT work as 1.44 drives on these machines. Remember you must have TOS 2.x, Ajax AND a 16 Mhz signal.

— Mike, GenTech and POWER Computers

If you have a MegaSTE or TT, odds are that a service like the GEnie ST RT isn't just a luxury, it's a necessity to keep your system running with the best.

RTC Highlights

by Brian Harvey

Hi, again, and welcome to another month of Real Time Conferences (RTCs) on GEnie! This month we have three RTCs to discuss and elaborate on. The first RTC up for discussion is the Walnut Creek's *GEMini CD-ROM* RTC with guests Eric Tremblay and Rene Guimont. This RTC was held on March 23, 1994 and dealt with Walnut Creek's first CD-ROM for the Atari, appropriately named *GEMini*. Walnut Creek has an outstanding reputation in the PC market and it is evident in *GEMini*. This CD contains public domain, shareware, commercial demos of Atari ST applications, a large selection of electronic magazines, DTP fonts, and many other files that will be of interest to the general Atari user.

It was commented by Dave Troy (TOAD Computers) that this CD-ROM has generated sales of CD-ROM players and vice versa. Eric then reminded users that when they buy a player, it should be a SCSI external CD-ROM drive since a SCSI will work with anything from a MAC, IBM PC, Atari, etc. This is a good point for anyone who wants a drive but is uncertain about the Atari market, since he can use it with whatever system he acquires in the future. Floyd Fisher asked what, exactly, you need, software-wise, to get a CD-ROM working with an Atari. Greg Kopchak from It's All Relative suggested *ExtenDOS* by Anodyne Software. It can be bought from most Atari dealers and they are in category 4, topic 19 in the Atari RT.

"Well, what is available right now?" was asked. Right now there aren't that many CD-ROMs for the Atari on the market, but other format CD-ROMs can be used for such things as *PhotoCD*, fonts, clip art, text files, etc. Therefore, you are not being limited to what is available currently for the Atari platform. Charles Smeton of *STraight FAX* fame commented that this magazine, *Current Notes*, had put out an Atari specific PD s/w CD years ago. Charles also stated, there are many non-Atari specific CD's, such as *GIF's Galore* from Walnut Creek that have Atari GIF viewers on the disk. In addition, It's All Relative has a few CD-ROM projects and from Sterling Connection the *STerling CD* is a compilation of some of their fine products such as clip art, templates and other goodies. The new *ST-Informer* or *Current Notes* has an ad for it. There should be more details on this CD-ROM by the time you read this article. Also, there is a front end for the Project Gutenburg series of CD-ROMs.

Eric went on to state that most of the programs for this CD-ROM came from either GEnie or the Internet. Eric stated, "I have to add that GEnie is a BIGGER site than the Internet for Atari software." See, haven't we told you that GEnie is the place to be for Atari!! As in all new products, bugs can slip in and this CD-ROM is no exception. In fact, Eric stated "with the hundreds and hundreds of files found on the *GEMini CD-ROM*, it's almost predictable that some files don't work for one reason or the other." Each file was tested before being included on the CD-ROM, but they cannot guarantee that all files work on your computer and that all files are perfect. Eric hopes that people will focus on the good side of the CD-ROM and remember this is a first edition. (Later editions are determined by the market demand.)

These guys are very professional in their making of this CD-ROM in that anyone who has a program on the *GEMini CD* is entitled to a free copy of the CD! Now programmers can't beat that! Not only are they getting their demos and shareware products promoted, but, also, they can gain a free CD-ROM. This free CD-ROM is part of the Walnut Creek Policy. All you have to do is send Eric e-mail or write Walnut Creek with all the details and Eric will look into it.

Dave Shorr asked about the amount of data this CD-ROM can hold and Eric stated it is over 600 MB total. Wow, a far cry from my 50 meg hard drive! I reminded folks that the CD can be read by any PC CD-ROM and the files copied onto disks to be used with the Atari. A lot of people have CD-ROMs at work or friends with one. For me, I had my local dealer, RGB Data Consultants, print a file listing on disk for me when my copy arrived. There are so many files that I still haven't had the time to look at ALL THOSE files!

As per most RTCs there were prizes for attendance, and this RTC was no exception. In fact, two lucky guests won prizes of a free copy of the CD-ROM. On the 30th of March, we had the second RTC with the gang from Processor Direct. The gang consists of Sean Dougherty (Publisher), Robert Fernandez (Editor), and Timothy Miller (Technical Editor). Processor Direct is the latest magazine publishing for the Atari family of computers. The RTC was held to celebrate the release of their FIRST ISSUE! This magazine is unique in size: the page size is 11.5 inches wide by 13.5 inches tall, thus making the layout more of a news journal format. (Could this be the biggest Atari magazine?) Sean feels this size makes layouts very easy and he personally thinks the larger size makes the magazine look better and more visually impressive. I had a copy couriered to me and it is impressive! They decided to go with an 80–pound glossy paper for the covers and 80–pound matte for the internal pages. As Sean puts it, "Any thicker and they would have to call it plywood!" It is produced using a Falcon030 outfitted with DMC's *Calamus SL* and a host of modules and *Outline Art 3*, as well as a variety of other software.

Mike Allen commented that complaints are often heard that there aren't enough American magazines catering to the Atari user. Mike believes it takes three requirements for a mag to succeed. First, the willingness of someone to publish it. Second, the magazine needs the support of advertisers. Sean stated the size of the magazine will be dependent on the advertising and, thus, it can increase quite quickly once advertisers jump aboard. Finally, for Processor Direct to succeed, it needs readers. Processor Direct needs your subscriptions. I think we can all agree that all three are crucial for us to keep all the fine magazines, such as this magazine, to survive in these uncertain times!

So what does Processor Direct cover? A lot! They have articles and columns on a variety of topics including MIDI, Graphics, Cookies, and some reviews of software, both shareware and commercial. There is a "hard" technical article by the world famous author, Mike Allen, on the finer qualities of the Cookies inside the Atari. They are looking for a nice blend of articles and they have even included a survey so that you, the readers, can send in your suggestions via snail (postal services) or regular mail. Tell them what you like and don't like and changes are bound to be made!

Currently, they are distributing the magazine themselves. This is to keep track of just how many they are selling and to whom. In the future, they will probably go through a distributor as this tracking becomes less necessary. Again, an RTC wouldn't be complete without prizes and Processor Direct gave away four prizes of an issue of the magazine. Of course, everyone is concerned about the durability of any new product in the Atari community and this venture is no exception. Sean stated, "Having been "ripped off" myself in the past, that is our last intention. . . Don't forget, when we say 12 issues, you'll get 12 issues or the money back for the issues not sent!" If you would like to order an issue or subscribe, just mail a check or money order made out to Two Worlds Publishing ($3.50 single, $25 for 12 issues) to: Two Worlds Publishing, Inc. 3837 Northdale Blvd. #225 Tampa, FL 33624

The April 1st Dateline Atari with Bob Brodie was a GEnie holiday weekend, as well as being April Fool's Day. In fact, Bob opened the RTC with a selection of recent April Fool's press releases concerning Atari. I won't reprint them here because they are too long. This RTC focused mainly on the Jaguar and the Lynx, but not entirely. For a user of *AtariWorks* (*AW*) like myself, it was great news to hear that this program is not being forgotten! If your version of *AW* has the Black Page Syndrome, it can be returned to Bob Brodie at Atari and he will provide you with version 1.2 of *Works* which doesn't have the BPS. On news of other updates, Bob commented that Atari has authorized COMPO software to do the release of *Speedo 4.2*. Also, there isn't a firm release date on the AES or MultiTOS at this time. However, they are in the hands of developers.

It was asked if we will see Atari selling Falcons through chains, such as Sears. Bob answered that right now he doesn't think that Atari will have much success selling Falcons through chain stores. Steve Elek, a Sears Office Center Account Executive at University Park Mall, Mishawaka, Indiana, didn't agree with this evaluation of Atari's potential at Sears. He commented, "We'd love to sell Atari! . . . Since the JAG will be coming to Sears, the Atari computers should too." Bob replied that things may be different at Steve's store, but from his onsite observations, "I've been in Sears stores before looking at their computer products, and it's not been a rewarding experience. . . The machines were never properly demoed. . . It would take a large investment in advertising and marketing. Unfortunately, those dollars are better spent on the Jaguar for now. For example, just educating retailers why Atari computers would be a better choice for their customers would be a huge task." Again, he stated that, for economic reasons, they are concentrating on the Jaguar. In order for Atari to prosper, the Jaguar must be handled correctly. Regarding people's concerns about this emphasis, Bob stated, "Although I'm not telling many of our customers what they want to hear about our computer line, I want to assure you that I personally share your views: Atari Computers remain my personal machines of choice!!"

The Jaguar Virtual Reality HMD was discussed and Bob commented that although Atari is interested in Virtual Reality HMD, the present possibilities are very expensive. Therefore, for now Atari is working with third party developers to get something made more in line with the Jaguar market.

Well, until next month, good computing and good Atari computing!! Don't forget to drop in sometime to the RTCs and say hello!

CAT's Eye View

by Brian H. Harvey

Hi, again, everyone! This small column is to give you a taste, just a taste, of what is offered in one of the many categories in the Atari ST RoundTable. This category isn't sponsored by any developer but in it you may find products from any developer and products for everything from the ST to the Falcon to the Jaguar to the Lynx. What category can that be? Obviously, the FOR SALE category! What? A category for just selling things? Dishwashers? Cars? Spouses? Sorry, none of these, especially not the last! (My wife and proof reader, Sheila, would not be impressed!)

This category is to sell your Atari related products (and in the Wanted topic, to look for something for the Atari). To be more specific, it does not deal with 8 bit, IBM or Amiga computers; the items must be for the ST, Lynx, etc. For someone on a limited budget it can be a great place to get vital cash for his next Atari purchase or that vital second, third or fourth-hand piece of hardware or software.

Personally, I have bought more than $1400 in hardware and software over the past few years (average cost $50.00) and have never had any problems. Problems you say? Yes, like any transactions concerning money or barter, errors or worse can occur. Items can be received damaged, go missing or get burned up in a delivery truck.

Therefore, there are some common sense rules to follow before sending money or software. These rules are laid out in topic one (Policies) and elaborated on, discussed and questioned (yes we DO listen to the users' requests) in topic 16 of Category 27 (FOR SALE category). Only GEnie users can sell items since at least the buyer would have the seller's email address. This also guarantees that both buyer and seller are aware of the policies governing this area. Anyway, the problems, from my experience, have been few and far between.

Good communication before sending the product/money usually means good results. For example, for Canadians buying from the US it is advisable to ask for the item to be sent US Post and not UPS since the cross border surcharge can run around $16.24!! It can be fairly hefty when the item maybe only worth about the same. However, on larger hardware items I would follow UPS since it would be quicker to recover damages for insurance purposes.

The topics are categorized into related subjects. Topic two is for hardware items for sale for the ST, TT or Falcon, while topic three is for the software items related to these systems. For those people wanting to buy items, we have topic 5 appropriately named WANTED for the same systems. The Lynx and Jaguar have one topic each, which serves both buying and selling the related hardware and software. These topics are topics 12 and 4 respectively. As previously mentioned, topic 16 is where this category policy is discussed and any question is asked. Why not ask in the pertinent topic? Well, that's simple to answer! I am a keener and I delete all messages in topics 2–5 and 12 after approximately 30 days. This is to prevent the user from having a large pile of out-of-date ads kicking about the category. Therefore, by placing questions in topic 16 they are kept for others who may want to view them. Other topics include topic 20, which is Ethics, and topic 21, Commercial Sales. Both topics provide interesting reading.

Well, that's it for this time with this column. If you like it, then let us know and, if you don't, tell us how to improve it! If you want a particular category covered, then send email to me at GEnie "BRIAN.H" or via Internet at "BRIAN.H@GENIE.GEIS.COM" (no quotes).

Lou's note: Most of the ads in For Sale are from private individuals who are regular members of the RT. Occasionally, one can find exceptional deals from developers. Some of the deals recently posted included used Moniterms, monster Hard Drives and older versions of software packages with upgrade offers.

Around GEnie

by Lou Rocha

MEDICAL RT

Disclaimer: The Medical RT on GEnie is a place for information exchange, which may be helpful to the individual. Under no circumstances should this service be considered as an alternative to personal medical treatment by a licensed practicioner.

The Medical RoundTable is found on Page 745. As with all RTs, you will find the usual setup of Bulletin Board, Conference Room and Library areas. This RT also maintains a quick-capture weekly item called *Issues and News in Medicine* for those who prefer such a clipping service. In addition, there is an area for Medical Professionals to conduct private exchanges of information.

The library area contains "hundreds of text files, bibliographic searches and software programs for both medical professionals and the consumer. There are a large number of graphic images in GIF format."

In the bulletin board, you will find a number of interesting and timely topics, such as *Medical Ethics/Philosophy* (Category 8), *Health in the Workplace* (Category 9), *Computers in Medicine* (Category 11), *Pharmacology and Drug Abuse* (Category 12), *Health Care Systems* (Category 15), *Homeopathy, Acupuncture, etc.* (Category 16), *Emergency Medicine* (Category 22), *AIDS* (Category 25).

TRAVEL RT

On Page 560 the Travel RoundTable provides another kind of consumer service that can be equally valuable as the information in the Medical RT. The welcome message says it all:

"Whether you're travelling for business or pleasure; to find relaxation or seek adventure, the TRAVEL RT will help make your travelling a breeze! How to get there? Where to go? Where to stay? How to SAVE money. No matter what your destination we'll answer your travel questions (or find someone who can). AND since no one is more expert than the traveler who's already been there, we want to hear all your best (and worst) travel experiences. Make the TRAVEL RT part of your life!"

RT Sysop, Gary Bungart, is assisted by 11 assistants who cover many topics on rail and airplane travel, cruise information and World Travel. In addition to the general information found on the bulletin board, there are doors to the DISNEY RT, American Airlines EAASY SABRE and the Official Airline Guides (OAG).

The EAASY SABRE system is available with no surcharges. You can collect information about weather, flights and hotels at normal GEnie rates. You can also start an account on the EAASY SABRE system, book flights and make hotel reservations from your home or office computer!

The Official Airline Guides (OAG) area is also a very useful and popular service—"The OAG Electronic Edition(R) Travel Service provides access to all your travel planning needs. OAG is a full-fledged, user-friendly travel service with everything the business or pleasure traveler needs to gain information, plan, and book travel almost anywhere in the world!" OAG contains several travel-related databases. The OAG Electronic Edition Travel Service allows users to view schedules for over 600 airlines updated weekly, millions of fares updated daily, and over 37,500 hotels in North America, Europe, and the Pacific. The OAG Electronic Edition Travel Service also provides the unique ability to compare the lowest available airfares before you book online.

Other databases include: Airport Arrival/Departure; Currency Exchange Rates Information; Weather Forecast Information; AA Rated European Hotels & World Travel Guide Restaurants; Official Recreation Guide; Tours and Discount Travel; Vacation Florida; Ski Resort Information; Cruise Marketplace; Sea Breeze Cruises; All Cruise Travel Guide.

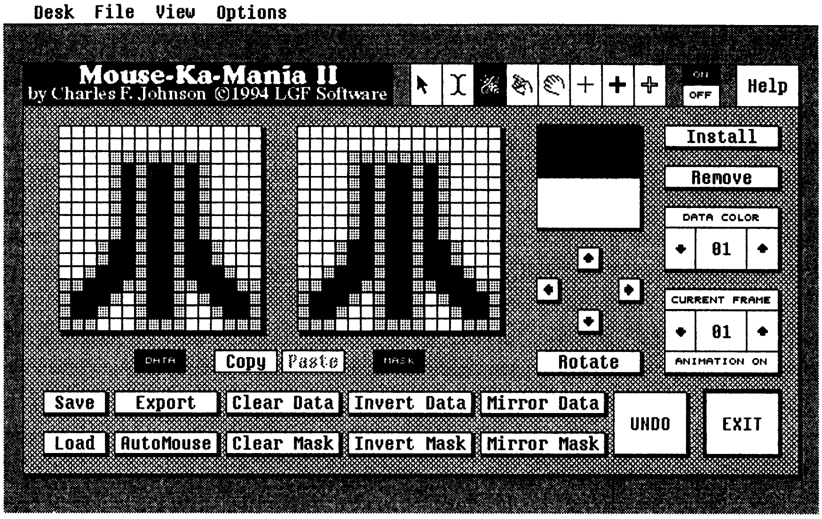
In addition, there are a host of other services and databases that I have not mentioned. OAG has the traveller in mind and you can obtain a free guidebook just by registering while online. I did so and received a booklet that has helped me save money on my Florida Vacation and find some new spots to visit! OAG also has a 24 hour Help Desk in case you need some personal attention. U.S. (outside Illinois) 1-800-323-4000; Illinois 312-562-4455

ST Library

by Gordon Meyer

Mouse-Ka-Mania II

Charles F. Johnson, of Codehead and Little Green Footballs fame, has released a revamped, steroid-filled version of his popular *Mouse-Ka-Mania* utility. Charles describes the program as a "software toy" that'll give you lots of unproductive, but oh-so-enjoyable, fun. I couldn't agree more.



Mouse-Ka-Mania II (MKM2), at its most basic level, allows you to replace any of the standard Atari mouse shapes with shapes of your own design. The new shapes can even be animated (up to 32 frames per shape)! I know you're all very familiar with the "busy-bee" cursor. Imagine replacing it with a version that flaps its wings, or go all out and substitute a spinning beach ball or a pipe-puffing picture of "Bob." You can replace any (or all) of the eight shapes that GEM supports. You might choose, for example, a pulsing arrow for your regular cursor, the standard busy-bee, and a spinning ying-yang symbol for the flat-hand shape. *(Lou's note: The BOBBIT mouse animation was a real "hit" in April. You will die laughing!)*

MKM2 comes with well over 100 mouse shapes for you to choose from. But if one of these doesn't strike your fancy, then use *MKM2's* mouse editor to create your own. The editor is exceptionally well designed and easy to use. If you're a programmer, you can export mouse shapes in BASIC, C, or Assembly source code for use in your own programs.

MKM2 runs as a desk accessory but also has the ability to create standalone "AUTOMOUSE" programs for use in the AUTO folder. Simply pick out which mouse shapes you want to use and *MKM2* creates a custom program that will install the shapes without loading the desk accessory. *MKM2* is shareware; registration is $15.00.

Sign Up. GEnie's new rates are attracting a lot of users to telecommunications. For $8.95 per month you get 4 hours of free connect time—long distance and sprint node charges extra. Additional time is charged at $3 per hour.

To sign up, just follow these simple steps:

1. Set your communications software for half duplex (local echo), at 300, 1200 or 2400 baud.
2. Dial toll free: 1-800-638-8369 (in Canada call 1-800-387-8330). Upon connection, enter HHH
3. At the U#= prompt, enter XTX99437,GENIE and then press [RETURN].
4. Have a major credit card ready. In the U.S. you may also use your checking account number.

S.A.L.S.A.

(The ST Atari League of San Antonio)

Presents

Texas Atari Festival '94

The 1994 Texas Atari Festival is scheduled for June 4th and 5th at the Moody Life Sciences building on the St. Mary's University Campus in San Antonio, TX. Demonstrations of Desktop Publishing, MIDI, Telecommunications, Word Processing, and the exciting new Jaguar game console are planned. Featured vendors include: **TOAD Computers, Gribnif Software, Trace Technologies, DMJ Software, More Than Games,** and **SDS Publishing**. And, the list keeps growing! Make your plans to attend now! Door prizes every half hour. Admittance is $3 at the door.

WHERE:

St. Mary's University
San Antonio, TX

WHEN:

June 4th 10AM - 5PM
June 5th 10AM - 5PM

FOR MORE INFORMATION:

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(210)655-4672
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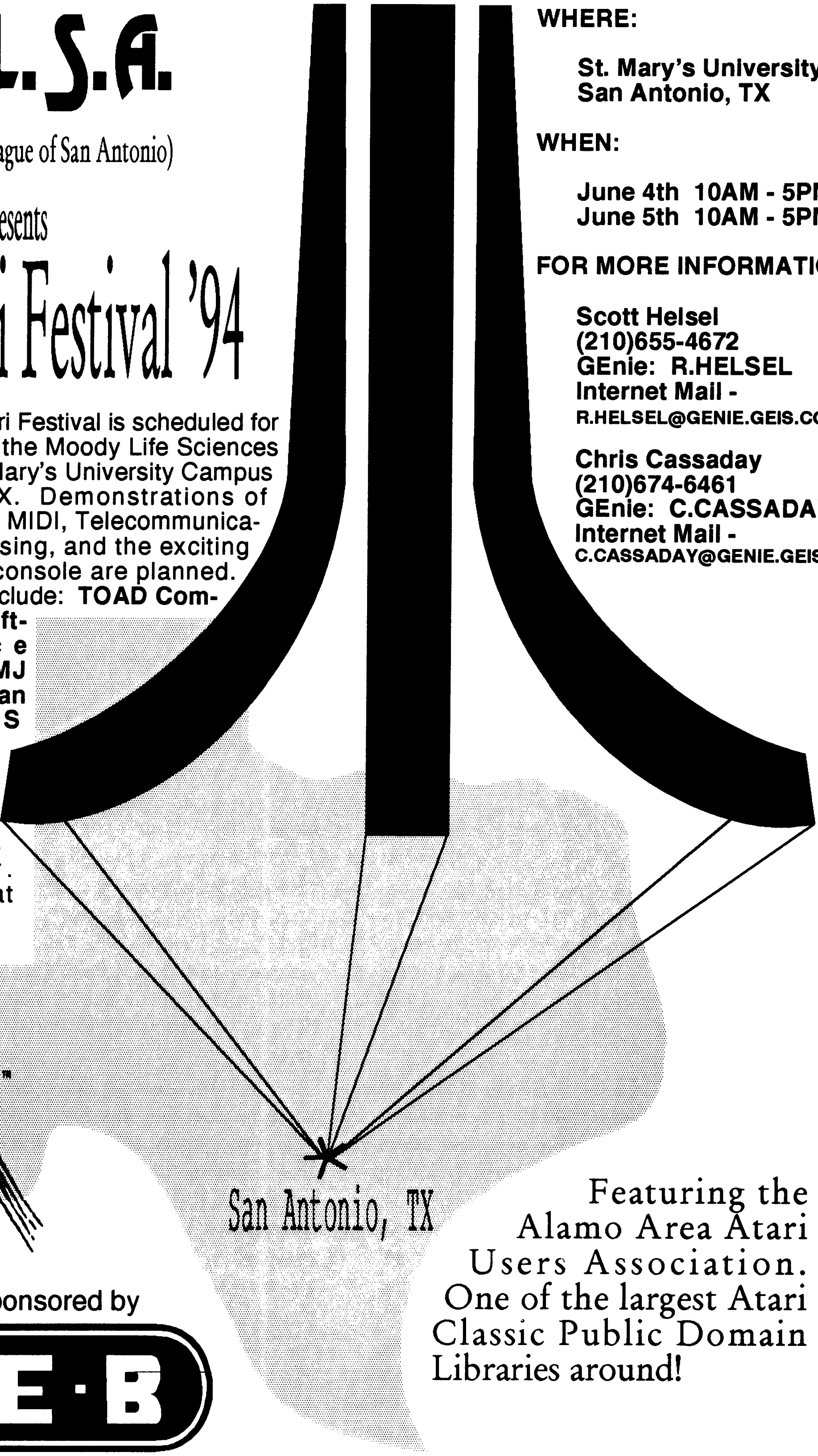

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Atari in the STicks

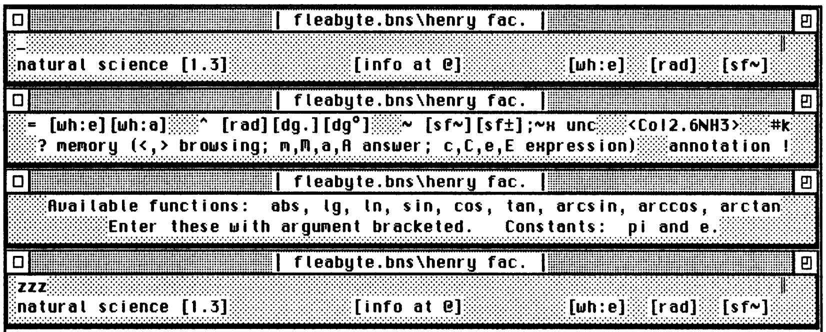
Henry K. van Eyken

Fleabyte Fundamentals

Their Spirit and Their Substance

This month's crucible is filled with notions that I can only hope are to your taste. Some are in crystalline form, others are still in solution. The crucible is called *Fleabyte*.

You know, don't you, there are two *Fleabytes*? One is the real one, the pocket computer, like those introduced last month. The other is a homolog that runs as an accessory on the ST. Figure 1 introduces the latter so you may quickly get a feel of where we are headed.



```
| fleabyte.bns\henry fac. |
_
natural science [1.3]            [info at @]            [wh:e]  [rad]  [sf~]

| fleabyte.bns\henry fac. |
 = [wh:e][wh:a]   ^ [rad][dg.][dg°]   ~ [sf~][sf±];~x unc   <Col2.6NH3>   #k
  ? memory (<,> browsing; m,M,a,A answer; c,C,e,E expression)   annotation !

| fleabyte.bns\henry fac. |
   Available functions:  abs, lg, ln, sin, cos, tan, arcsin, arccos, arctan
         Enter these with argument bracketed.   Constants:  pi and e.

| fleabyte.bns\henry fac. |
zzz
natural science [1.3]            [info at @]            [wh:e]  [rad]  [sf~]
```

Fig. 1—For fast, fast relief. (a) Type @ for help. (b) Help comes as reminders. (c) Shows what's on tap-tap-tap. (d) *Fleabyte* out of action. That's the time to click it off the screen.

Figure 2 is an action shot. It shows some of the work the accessory does. This includes automated transfer of equations to the word-processor while they are made presentable on the way over. Well, not always! Exponents can't yet be converted to superscript because the accessory only works with what is often called *normal style*.

There are things the accessory can do that Figure 2 does not show. And, conversely, there are things I like it to do that it cannot yet. Which brings up a point. Why not take part in developing the kind of computing being discussed here? Who knows, this might be the beginning of a wonderful cooperation.

You see, the subject here is less a piece of software than a concept. Its objective is to serve in educational and personal computing, and it exemplifies much of what has been expressed in this column. Though off the beaten path, you'll find it quite straightforward. The project is not commercial; I just hope it will do some good. It is fascinating, but it can be quite frustrating as well. Then it is best to remind oneself to treat it more as a hobby than as some mission of sorts; to not always take things too seriously.

And, please, don't you take too seriously that chemical formula and those oddities like the tilde (). Chemistry is not our prime concern here. It serves mainly as a mannequin: to model a gauzy attire, to nurture a notion, to fan a feeling, to portray a promise. . . Still, it is, perhaps, a good idea to explain in a few words what formulas and reaction equations are. If you do already know about these things, skip to the next stop, to where the fun begins.

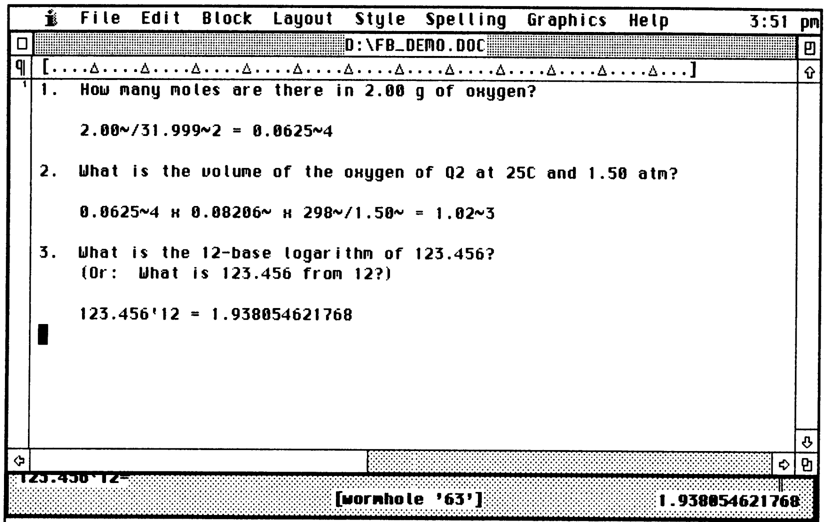
Weighty Matters

Most of the millions of substances known are collections of huge numbers of identical, invisibly tiny particles called *molecules* that themselves are aggregates of still smaller particles called *atoms*. Different molecules make different substances. As for those atoms, there are only about a hundred different kinds in all, most of them rare.

The tiniest particle of water is a molecule that is an assembly of one oxygen atom and two hydrogen atoms. Ordinary alcohol has molecules built with two carbon atoms, six hydrogen atoms, and an oxygen atom. There are also molecules whose atoms are all of only one kind; for example, a molecule of oxygen consists of two oxygen atoms, a molecule of ozone of three oxygen atoms. There are even molecules that are just one, single, solitary atom. One percent of the air we breathe is argon whose molecules *are* atoms. Substances like oxygen, ozone, and argon, whose atoms are all the same are called *elements*. Substances compounded of more than one kind of atom are called *compounds*.

Atoms are tough nuts to crack, but molecules may be broken quite easily ("dust to dust") and the pieces used for creating other molecules. Typically, vast numbers of molecules participate in such a *chemical reaction*, numbers the likes of 1,000,000,000,000,000,000,000,000, or, *septillion* for short.

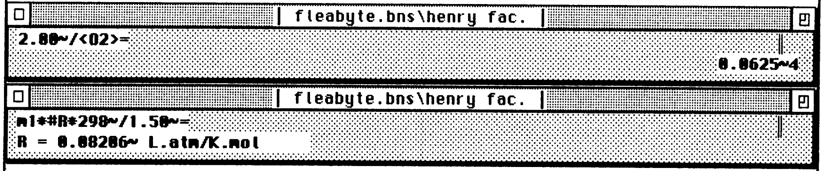
Chemists need to know the weights of individual molecules so that they can keep count by weighing them in bulk lots. One usually calculates the weight of a single molecule from knowing (a) how many of each kind of atom there are in it and (b) the weights of those individual atoms. Atomic weights are found in a, what else?, *table of atomic weights*. The table tells us that, for example, an oxygen atom weighs 15.9994 units and a hydrogen atom weighs 1.0079 units. The weight of a water molecule, therefore, is 15.9994 units plus 2 x 1.0079 units = 18.0152 units. Similarly, knowing that the atomic weight of carbon is 12.001, the weight of a molecule of acetic acid (that which makes vinegar sour) works out to 2 x 12.011 units for its two carbon atoms, plus 4 x 1.0079 units for four hydrogen atoms, plus 2 x 15.9994 units for its oxygen atoms, which all add up to 60.053 units for the whole molecule. Those units are officially called *atomic mass units*.



```
1.  How many moles are there in 2.00 g of oxygen?

    2.00~/31.999~2 = 0.0625~4

2.  What is the volume of the oxygen of Q2 at 25C and 1.50 atm?

    0.0625~4 x 0.08206~ x 298~/1.50~ = 1.02~3

3.  What is the 12-base logarithm of 123.456?
    (Or:  What is 123.456 from 12?)

    123.456'12 = 1.938054621768
```

```
123.456'12=
                    [wormhole '63']          1.938054621768
```

Fig. 2a—Getting dressed on the run. Solutions to two chemistry problems and to a math problem. One may transfer either the answer alone (wh:a) or the whole equation (wh:e) directly from calculator to wordprocessor or editor. Formulas and symbols are made presentable on the move. Numbers following the tilde represent the range of uncertainty in the digit preceding it. Uncertainty in data must be accounted for in calculations before passing judgements on them.



```
2.00~/<02>=
                                                   0.0625~4
```

```
m1*#R*298~/1.50~=
R = 0.08206~ L.atm/K.mol
```

Fig. 2b—Easy does it. (Top) It's much easier to enter a formula, here O_2, than first work out a molecular weight. Angular brackets aid program in parsing routine. (Bottom) Answer from first calculation goes straight back as 'ml'. No need to look up the gas constant, *R*, but one must be sure it comes with the desired units before using it by pressing *Return* once more for the answer.

People usually prefer atomic symbols to names because they make life easier. Thus we have C for carbon, H for hydrogen, and O for oxygen. A molecule of water is represented by a *formula* composed of symbols, H_2O, in which a subscripted number after a symbol shows the number of atoms thus represented in the molecule. To avoid useless clutter, a *1* is never written.

Although here, too, appearance reigns victorious, limestone and pearls are of the same stuff. It is formally called calcium carbonate and the formula is $CaCO_3$. Atoms with the same initial are told apart by a second letter: Ca stands for calcium. Cleopatra expressed disdain for baubles by dissolving a pearl in vinegary wine,

$$CaCO_3 + 2\,C_2H_4O_2 \rightarrow Ca(C_2H_3O_2)_2 + 2\,CO_2,$$

an opulence that few chemical historians omit. And it has been said that *Senatus Populusque Romanum* lost their empire because of wine sweetened by sugar of lead formed during storage in leaden flasks:

$$Pb + 2\,C_2H_4O_2 \rightarrow Pb(C_2H_3O_2)_2 + H_2$$

The $Pb(C_2H_3O_2)_2$ thus dissolved speeded the metal ('plumbum, Pb') to Roman brains. No laughing matter, this. Those who use leaded gasoline also cause brain damage. And during the first 25 years of my life, when plumbers still used plumbum, drinking water came piped through leaden tubing. See? Now you understand.

No End to Fun

Chemistry teachers calculate molecular weights all the time. They calculate them at the blackboards, they calculate them at their desks, they calculate them again and over again when checking students' work. So, why not let computers do it?

A setback of those old Casio pocket computers programmed for this purpose is their tardiness. Often one can produce an answer faster from one's head. Later I got a Psion II. Its response speed was heaven, programming it a delight, but its keyboard was a pain. Would you believe a square of keys, six each way, in alphabetical order with a shift key to change between letters and digits? One daring outfit even put on the market a typing course for it. I've seen it, in a chemist's shop window, in London. I didn't bother.

Using computers for calculating molecular weights is not exactly a momentous find; such routines are a dime a dozen. Handy though they may be, they are hardly more than an automated sequence of replacing letters by numbers and a follow-up with multiplications and additions. Things become more interesting, however, when those calculations are made a *procedure*, a programming segment that other programs may call on for the automated solving of more complicated chemical arithmetic, or *stoichiometry*, as chemists call it. That turns the program from a mere specialty device into an applied-math calculator.

One example of such a second-tier calculation is deriving a chemical formula from analytical data. That cannot rely entirely on plain arithmetic because analytical data are encumbered by measuring errors. Hence, a modicum of judgement is needed, something that puts *fuzzy* in *fuzzy arithmetic*. Now it's getting to be fun.

The reaction equations shown above are *balanced*. By putting coefficients in front of some of the formulas the number of atoms of each kind are the same on both sides of the equation. For example, the forming of ozone from oxygen is depicted by a balanced equation with six oxygen atoms on each side:

$$3\,O_2 \rightarrow 2\,O_3$$

All atoms used in the reaction are accounted for after. Much stoichiometry is based on such *balanced equations*. The balancing, *i.e.* putting in the coefficients, is usually done by inspecting the unbalanced equation. With some practice, one quickly develops a "cultivated intuition" for it. *Fleabyte*, too, by letting the program closely follow the human approach, can balance chemical equations *by inspection* (and, at this time, is incapable of balancing those equations that people don't do this way). Keying in a chemical equation is more trouble than it is worth, but a balance is essential for many calculations.

Here, then, we have two examples to indicate that solving problems is more than straight math. But where this subject *really* gets interesting is outside computing. It is in the realm of education and work. Computers so helpful put us in a better position to think about, and, let's hope, will come to terms with probing questions about just what learning is most likely to benefit students in their later life. We have here, effectively, a continuation of the debate begun when handheld, electronic calculators first went to school. "Do we still insist that kids memorize their tables?" people used to agonize. Color me conservative on that score.

Sojourning on the Desktop

When Japanese programmable pocket computers left the market, the best way to proceed was with my ST. Naturally, a small interface is called for so that any good experience may be readily transferred to pocket computers. There was no question ever that they would come back as, of course, indeed they have.

Sticking with a small interface happened to fit in beautifully with another, more immediate objective: to make a calculator accessory for making classroom tests and answer-sheets with a wordprocessor. Along the on-screen bottom of *1st Word Plus* is a narrow strip where an accessory can fit nicely and, hence, the first design criterion for the new *Fleabyte* became keeping the display down to two lines. These lines must accomodate input, output, user options, such as specifying *degrees* or *radians*, visible memory, and a *help* option. The list grew as things went along and the end isn't yet in sight. Molecular weights are calculated straight from chemical formulas, constants are called from internal storage, unit conversions should eventually be done automatically. And that is just for starters.

A lucky break put me in touch with a neat idea by another amateur, Bernard Hanstede. Built into the *Fleabyte* accessory, it makes for automated transfer of either complete equations or just answers—user's choice—from calculator to wordprocessor and eliminates the need to type things twice.[2]

For mathematical sophistication, superior on-screen calculators exist. *El Cal* by *CN* regular, J. Andrzej Wrotniak, is a well-known name in the Atari community. It solves equations and does calculus and statistics. To get *Fleabyte* to soar to its heights (which it must aspire to) requires expertise and time. *Fleabyte's* conceptual niche is extending calculations from pure math to applied math; and beyond.

Dancing My Tilde

Even chemists may find Figure 2 a little strange. What are those squiggles doing there? Those *tildes*? Answer: They allow for uncertainty in measurements. A number that follows a tilde is the uncertainty in the last digit preceding it. The molecular weight of acetic acid, the stuff that makes vinegar sour, is 60.0538. This means that I don't really know the precise molecular weight of $C_2H_4O_2$, all I know is that it is somewhere in the range 60.049—60.057 (60.053±.004).

Why can't *Fleabyte* report an exact molecular weight? Because it is calculated from atomic weights that themselves are not accurately known. Here are the atomic weights of the elements in acetic acid as provided by a committee of the International Union of Pure and Applied Science:

C	12.001	±	0.001
H	1.00794	±	0.00007
O	15.9994	±	0.0003

To clearer understand what is meant by *uncertainty* consider a metric ruler. The smallest divisions are millimeters. You would report a length of so many millimeters even though it might fall just short or goes just beyond a mark on the ruler. Thus, when you tell me that something is, say 13.7 mm long, I deduce that what you measured is between 13.65 and 13.75 mm. In other words, I sense an uncertainty of 0.1 mm. You *say*, "13.7 mm"; but I take you to *mean*, "13.7 ± 0.05 mm. "*Fleabyte* would record this as 13.71 (or just 13.7; following the chemists' custom of not cluttering script with *ones*). Returning to the given atomic weights, I read 12.001 ± 0.001 as 12.001 ± 0.0015 and recorded it as 12.0013.

Today's college students are told to use two simple *rules for sig-figs*. They would still come up with a molecular weight of 60.053, which, frankly, serves well for most purposes. My problem is not with that answer, not in the least. But if we are to have computers automatically do calculations based on the outcomes of other calculations, then we are likely to do better by dealing with uncertainty in an 'ab origino' fashion, not by rules of thumb. Those fast-thinking computers don't need rules as badly as we, people, do.

Once a computer program allows for uncertainty, it might as well do so, *in general*, so that uncertainty can be accomodated in all sorts of calculations that come its way. It isn't quite up to the designer to predict what math functions may have arguments with uncertainty. If a user sets his mind to calculating an imprecise-5-base logarithm of an imprecise number, he may do so. It's not up to me to tell him what to do and what not.

Will all this lead to other seemingly ridiculous situations? Maybe, maybe not. At this point that is not my worry; if something must be changed, well, then it will be changed. Please bear in mind for now that the accessory represents a concept more than anything. But a concept of which much can be used right now. What could be more practical?

Units of the World . . .

The automated execution of stacked calculations must include the sanitation of units of measurement. Entries may be a blend of units from various *systems* (metric, English) as well as any of many special units, such as atomic mass units, and carats, and troy ounces. A calculation must convert measures to produce an answer with desired units.

Units and their interconversions have not yet been incorporated in the accessory. For one thing, the work done so far has been done without any mass storage more capacious than floppies, which makes it a bit tedious at times. Secondly, I am not sure what users consider an acceptable approach, which is a bit stifling. Thirdly, I am not sure yet how best to parse expressions to unfailingly isolate units for evaluation. Let me show you what is meant by *parsing* with some examples.

The purpose of the angular brackets around chemical formulas is to let the program recognize and isolate the information that must be sent to the procedure for calculating molecular weights. Similarly, the purpose of the pound sign (*#*) in front of letter symbols that represent physical constants is to recognize them as candidates for evaluation from a table of constants in another procedure. (Notice that Figure 2b shows a constant together with its units so that the user may verify the units before proceeding with the calculation. This is a temporary way of doing things.)

How should units be identified for the parsing procedure? Should they be identified at all? Units would be typed in often, making it too cumbersome, if not outright irritating, for the user to also type in special identifying marks. Hence, it shall be up to the computer program to recognize what is a unit and what is not. Those units, to be sure, are only part of the language the calculator must learn to understand.

The list of units is fairly long and open to confusion. Take, *ounce*, for example. We have just *oz*, but we also have more specifically *oz ap* for apothecaries ounce, *oz avdp* for the common ounce of weight. Fluid ounce is represented by *fl oz*, a troy ounce by *oz t*. Troy and short ton are both identified by a *t*; long ton by *ton*. The ensuing difficulty is compounded by spaces within the abbreviations or names of certain units. My guess is that for most units these problems can pretty well be overcome and that the best way of going about things is to have the computer query the user in cases of doubt. We do the same in conversation between people. Nothing new here.

How Fleabyte Thinks

Nouns will identify physical properties, and verbs actions. Like units, this feature is not incorporated in the accessories now available. Reliance on algebraic symbols will no longer be good enough in many cases:there are too few of them and we don't want a tool intended to make things easy to become a burden instead. Hence, the program shall have to pick them out and verify words against dictionary entries that specify how words must be acted on.

If we want the calculator to calculate the weight of 500.0 milliliters of alcohol at 22 Centigrade, we might enter something like this:

500.0˜mL/density{‹C_2H_5OH› 22C}

Fleabyte calls on a table of densities and might find there the densities of alcohol at, let's say, 15C, 20C, 25C, 30C,etc. It will then have to interpolate from the data a density value for 22C with an estimate of uncertainty, and then calculate the weight. If the user is not a chemist, the word *alcohol* may have to do, but because there are many alcohols, the program must query the user about that word before using it. Interaction to ensure mutual understanding is essential. Easing that interaction is desirable.

Notice that the example identifies an operation, a *divi sion*. It betrays that the user knows the relationship between weight and volume and density. But, then again, the user may not know of any such relationship. Then the best he can do is specify what it is he wants. He might enter:

weight? 500.0˜mL density{‹C_2H_5OH› 22C}

Fleabyte then must recognize that 500.0˜mL represents a volume, then locate a relationship between weight, volume, and density, and then work things out accordingly. I leave to the reader's imagination other variants, such as how *Fleabyte* should react to the entry of a faulty relationship, or when there is not enough information for finding an answer. Should it pout or should it ask questions?

Is all this far out? Technically, it seems to me all rather straightforward. Sure, there is work to be done, and we need a pretty hefty storage space, also with a pocket computer. To make a personal store of data we should like to unerringly transfer available, organized data from the curved pages of a book to more suitable storage, something that optical character recognition cannot now do. (I have difficulty understanding why the push for handwriting recognition while the recognition of printed characters is still in such an abysmal state. Just goes to show how little I know.)

The real problem areas are convincing people that we mean business and then arriving at acceptable protocols, or does it have to be the other way around? The wedding of Man and microchip is like any other wedding: speak up now or forever hold your peace. There is, of course, still to be addressed that pesky question: Why the deuce get into all this? Is it worth it? Does it make sense, or are we engaging in unadulterated malarkey? As for myself, I decided to let intuition be my guide, just take one step at a time, and for now push aside the deeper details of questions of this kind.

Logarithms

Let's now consider two cases which, besides being candidates for automation, can help the learner to better understand. First case: painless logarithms. Second case: painless spreadsheets.

The opposite of *add* is subtract. The opposite of *multiply* is *divide*. The opposite of *exponentiate* lacks a single word; it is *to take the log of*. Let's demonstrate with examples:

12 + 5 = 17 17 - 5 = 12

8 x 23 = 184   184/23 = 8

123 = 3375 $\log_{12} 3375 = 3$

How out of place that last notation! It just doesn't belong. Students learn long-hand methods for adding and subtracting, for multiplying and dividing, and, in principle, for exponentiation as well. But a logarithm don't mean a thing 'cause it ain't got the swing.

Fleabyte provides another, a simpler, way for describing logarithmic operations, one that fits the rhythm of the rest of 'rithmetic's code. Do you perceive the meaning of 1000‘10 = 3? (Pronounce "1000 from 10 takes 3.") It takes the power 3 to raise 10 to 1000; or $10^3 = 1000$. Thus the answer, 3, is the ordinary, base-10 log of 1000, which, incidentally, may also be found by typing in log(1000) or lg(1000). I chose the symbol ‘ for various reasons, not the least of which is its presence on the computer keyboard. (It also reminds me of "dès" and it is part of ˆ.)

Dealing with logarithms in this manner expands its scope, *e.g.* 1234.5678‘2 = 10.26979035325 and, contrary to the notion of most people "familiar" with logarithms, there are logs of negative numbers—*certain* negative numbers that is. For example, -96889010407‘-7 = 13. Ever thought of logarithms this way? I know, I know: one shouldn't meddle in specialists' affairs. But maybe educators will find this feature useful. Or maybe they will tell me I am wrong and why so. So far, I haven't heard anything about it.

Matchmaker, Matchmaker, Make Me a Match

And spread me a sheet, for some questions may be better answered with a matrix or spreadsheet than with a single number. (For example, in chemical education, pH variations.) Simple spread sheets can be made expeditiously—without spending much more time than needed to read the caption to Figure 3. That simplicity comes from softwares cooperating. One version of the calculator accessory features *Quick Focus*, which receives inputs and does the calculations. Spreadsheet data are then saved to disk for import into a word processor or a text editor.

Here is the raw output of a spreadsheet produced within a minute from an expression for compounded interest,

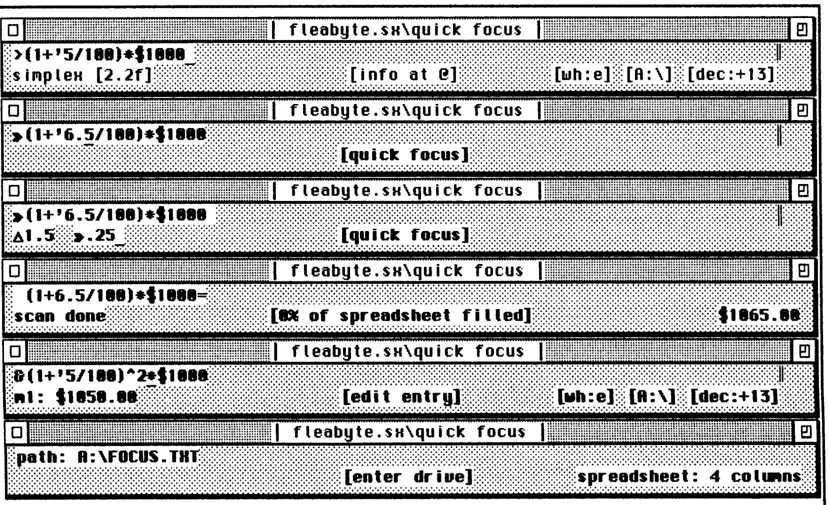
$(1 + \text{percent}/100)^{\text{years}}$ x capital

```
5. I  $1050.00 I  $1102.50 I  $1157.63
5.25 I  $1052.50 I  $1107.76 I  $1165.91
5.5 I  $1055.00 I  $1113.03 I  $1174.24
5.75 I  $1057.50 I  $1118.31 I  $1182.61
6. I  $1060.00 I  $1123.60 I  $1191.02
6.25 I  $1062.50 I  $1128.91 I  $1199.46
6.5 I  $1065.00 I  $1134.22 I  $1207.95
```

As Figure 3 shows, no letter variables are used. That should help make spreadsheets accessible to people, young and old, ill at ease with letter symbols. A little tabbing and dressing-up with the word processor produces the table you see below.

What you see is what you get. What could be easier? Instead of spending time on learning how to make spreadsheets and trying to predict what fiddling with spreadsheet com-

```
 Capital and Interest Annually Compounded
               (per $1000)
=========================================
  %      1 year      2 years     3 years
=========================================
5.00 I  $1050.00 I  $1102.50 I  $1157.63
5.25 I  $1052.50 I  $1107.76 I  $1165.91
5.50 I  $1055.00 I  $1113.03 I  $1174.24
5.75 I  $1057.50 I  $1118.31 I  $1182.61
6.00 I  $1060.00 I  $1123.60 I  $1191.02
6.25 I  $1062.50 I  $1128.91 I  $1199.46
6.50 I  $1065.00 I  $1134.22 I  $1207.95
=========================================
```



```
fleabyte.sx\quick focus
>(1+'5/100)*$1000_
simplex [2.2f]          [info at @]        [wh:e] [A:\] [dec:+13]

fleabyte.sx\quick focus
>(1+'6.5/100)*$1000
                        [quick focus]

fleabyte.sx\quick focus
>(1+'6.5/100)*$1000
Δ1.5  >.25_             [quick focus]

fleabyte.sx\quick focus
 (1+6.5/100)*$1000=
scan done          [0% of spreadsheet filled]              $1065.00

fleabyte.sx\quick focus
&(1+'5/100)^2*$1000
m1: $1050.00            [edit entry]       [wh:e] [A:\] [dec:+13]

fleabyte.sx\quick focus
path: A:\FOCUS.TXT
                        [enter drive]       spreadsheet: 4 columns
```

Fig. 3—KISSing *1-2-3* goodbye?
Maybe, maybe not. But this caption is just about the entire manual for making a spreadsheet. (a) First type ›, enter an expression and identify the variable with '. (b) Type in the terminal value of the independent variable. If you don't do that, the program assumes you will be entering experimental values and will ask for them one at a time. (c) Type in desired interval. If you are entering experimental values you won't be asked for this. (d) One keypress produces the first two columns of your spreadsheet. (e) Type & to start a next column. Reminders are where you may need them. (f) Type # to pick a drive. The FOCUS.TXT file contains the raw spreadsheet ready for import into your wordprocessor.

mands may make it look like in print, students may concentrate on important subject matter.

Spreadsheet may be produced from experimental data as well. Columns may be switched around with an up-to-date version of *EdHak*.[3] *EdHak* also accomodates humunculous spreads, those with lots of columns.

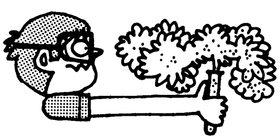
The accessory permits multitasking, of course. One may interrupt the work and add columns any time after doing something else. If one starts a new spreadsheet, forgetting there is already one in progress, *Fleabyte* will save it automatically as a file called AUTOSAVE.TXT. And for the icing on the cake, matching up with an item of PD software we shall show you next month how you can turn spreadsheet data into graphs.

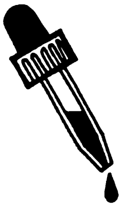
Notes and References

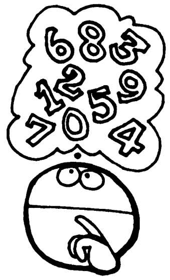
1. vE, "Fleabyte" accessories, GEnie ST Lib. 26566: FLEABYTE.LZH and *Current Notes* Library Disk #770D. On this month's CN Disk-of-the-Month are two Fleabyte accessories especially updated for this column: FBSX__25F.AC (simple arithmetic plus "Quick Focus") and FBNS__15.AC (full–function, uncertainty, atomic weights and physical constants). The author is, for now, holding back a full–function calculator with spreadsheet capability because he should like to have readers' reactions before putting more calculators in circulation. The disk also contains a debugged (?) 'Wormhole' accessory: WHSX__20D,AC (see vE, "To Kiss A Worm," 'CN', Dec. '93/Jan. '94.)

2. Hanstede's approach to pipelining is not the only one. It might even be frowned upon.

3. Mine is version 3.1G. And, o yes, before I forget! "Optical Character Recognition" recognizes shapes. Mac's Newton observes the "process" of shaping them. Newton has the heart of a graphologist.







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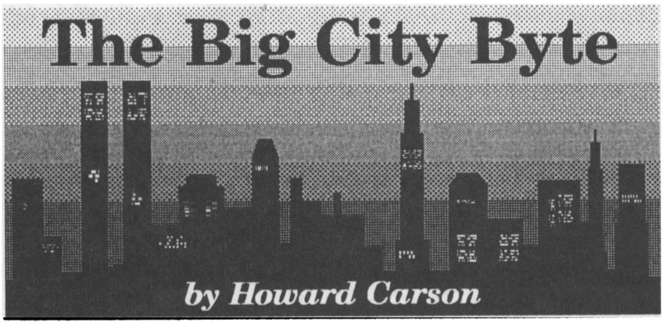

The Big City Byte

by Howard Carson

So there was this young man in my office, tagging along behind a client. I believe he was the client's indigent son. The young man was staring covetously at work stations full of hardware and software.

"Hey, Howard," the young man asked, "what do you, like, use all your computer crap for anyway, huh?"

"I use it for work," I replied simply, "I write, and I own and manage this research company."

"Is, like, that all?" he asked.

"Well. . .uh. . .actually, no," I replied, "I use it for other things, too."

"Like what?"

"Communications, uh, information services, uh, you know, things of that nature."

"Cool," he said, "so like, do ya' got any like, uh, programs I could like, uh, have? You know, uh, to copy, like?"

"No."

"How come, man?" he said, surprised (or feigning surprise), "it won't like, uh, hurt nothin'; you know?"

"It is illegal. It is destructive. If you want it, buy it for yourself. I'm not your keeper and I don't feel any need to support your software habit!" I said quickly, raising my voice.

"Aw c'mon," he said testily, "don't be such an old man. It looks like you've got, like, a lot of stuff here. What's your problem?"

He surveyed my shelves of floppies while a little drool escaped from his partly open mouth.

"Get out of here you goof!" I yelled to him. "Go and bother somebody else!" I had strong words for his father, later. Needless to say, the man was suitably embarrassed.

The kid slouched off, like, without actually understanding the rejection directed at him. Lousy communication is not the sole purview of politicians. Experienced computer users, who must generally communicate accurately by default, often don't get certain things properly said or written, at the most crucial moments. I am no exception, as it turns out.

What I should have said to the young gentleman (instead of just telling him to shove off), was that his request was more than just blatantly illegal. Of course, every time I hear the words 'old man,' as a pejorative reference to me, I see red. Getting past 40 sensitizes you to these things. Getting past 40 also usually means your experience has provided some insight to the congregate effects of illegally loaning, borrowing and disseminating software. The latest information I have encountered is that the hacked code of several newly popular Atari and Mac apps has recently begun making the rounds. These pirated versions, the commercial originals of which were authored in the U.S., are beginning to crop up in places as widely separated as Australia and France. And some of these pirated programs contain new viruses that are capable of fooling the hell out of U.V.K.!

Hot stuff.

Aside from the added viruses, the software is also being partially rewritten, in some cases, with different company names, intro screens, colors, slightly different access formats, etc.; much like ripping the badges off a stolen Sony and renaming it a Fony. This is outrageous. No normally intelligent computer user should be associated with this kind of dangerous nonsense.

Ten years ago, a close friend asked me if I had ever borrowed LP's or C.D.'s from anyone and then taped them. I was sitting loftily on my high horse and declined to answer his crass inquiry.

But I went home and thought about it.

It wasn't an easy thing to do, but I came to some interesting conclusions. It has taken some effort of will on my part to abide by those conclusions over the years. My track record has not been perfect. Some of the conclusions were predicated on the fact there was a lot of music on my shelves, illegally copied, listened to once, and then left to languish and gather dust, occupying space on expensive cassettes that could have been put to better use preserving my existing collection of LP's.

First, it must be noted that the blandishments of various advertisers and reviewers can be very hard to resist. But no matter how great the ads or reviews may be, we must avoid the temptation to give in to a desire for something we really can't afford. If we really, really need it, we can always do without cigarettes, beer, Coca Cola, Doritos, a couple of movies, clean underwear, etc. for a few weeks, and save the money. If we can't save quite enough, we then have to get down on our hands and knees and beg our neighborhood vendor for a better price. If there is an acceptable profit in our offer, and the vendor is sure you really don't have another nickel, he'll probably sell it to you. Failing that, download a shareware version of a similar program and send in the $10 or $20 registration fee. While it is admittedly the cheapest way to legitimately operate, we should all be aware of the fact there is some undeniably spectacular shareware out there. If you are even mildly determined, you will get far more than your money's worth.

One way or another, the folks who wrote the apps in the first place, will receive their royalty or credit or profit or recognition. Those folks will then be persuaded to write some more. The logical value of this sort of conduct should not pass understanding. And, of course, if we have been seduced by the ads or the excitement of others to the point of acquiring the commercial software or shareware by illegal means, please remember what I wrote above, about virus contamination.

Catastrophic virus contamination can be unbelievably devastating, not in the least because far too many of us maintain exceedingly poor backups. A really determined virus can ruin your whole year.

Second, and perhaps more important from a practical standpoint, it is illegal and unethical to acquire or possess unregistered, copyrighted material of any kind, without the expressed permission of the author or distributor. What that means is, any software you own or possess must contain a statement that it can be used by you in its current form–demo, trial test, full blown application, etc., for a stated or implicit period of time–after which other legalities kick in, like fees, registrations, prohibitions and restrictions about distribution or copying.

Third, if you are using software with someone else's name embedded as the registrant or something purportedly new that did not contain a warranty or registration card with a serial number on it, turn it off now. Delete it. Over the past 12 months, some serious problems have arisen with such usage, about which many people may not be aware. The most serious of those problems is the fact that individuals who have been caught hacking or distributing illegal software, are being placed into untenable positions by the authorities. In Europe, Canada and the U.S. for the most part, piracy laws and their attendant penalties have moved out of the realm of misdemeanor and into the realm of felony. As a result, individuals caught hacking or disseminating pirated or stolen software have required little persuasion to 'spill their guts' during plea bargaining sessions. Because of pressure that has been brought to bear recently, from such powerful sources as C.A.A.S.T. (Canadian Alliance Against Software Theft), Borland, Microsoft, IBM, Apple Corp., Atari, Corel and so on, the authorities have been pressured to not simply prosecute the offenders, but to demand the client lists of the offenders where they exist, during the course of those aforementioned plea bargains. The idea is to strip the market of contraband. It would be most unsettling to be sitting around in your underwear and socks, munching chips and sucking on a soft drink, get up to answer a knock at the door and be confronted by the police, who would at that point be running down an offender's client list and collecting software as they went along. They might even be handing out citations for being in possession of stolen, or counterfeit property. In Canada, England, Germany and the U.S., customs officials and federal police have been quite successful in these seizures.

This is not fantasy. This is beginning to take place all over the world, as law enforcement struggles to catch up with a large, rampant and tragic breach of legal, moral and ethical conduct. As shoplifting was once considered a casual misdemeanor, so, too, was software piracy and "borrowing." It is recognized presently that shoplifting costs billions of dollars in losses every year. If you take the time to inquire, you will find that the authorities now treat shoplifting as theft; that is to say, very seriously, indeed. Software hacking, piracy and borrowing (the infamous "evaluation copy"), is theft also. It is being treated as such. It is important to note in these situations, that the individuals caught first in the aforementioned sweeps have almost invariably been poor schmucks like you and I.

God help us all and pass the PD Library catalog, some stamps and oh yeah, TOAD's phone number.

So I'm over at another guy's house and I happen to glance over at his Mac LC IV. There on the screen is a program that I know he didn't buy over the counter. I had been with him on a business trip only two weeks earlier, when he turned down the enticements of a dealer in Kansas City trying to sell him the very same piece of software.

"Hey," I called to him, "I thought you didn't buy this DTP package. Did you pick it up here?"

"Uh, well, um I mean, uh. . .no," he said rushing back into the room, frantically trying to shut everything down, "not exactly. . .heh, heh."

"You're disgusting," I said, "how can you use stuff like this? You're a name brand manufacturer for crying out loud! You, of all people, know how stupid this is."

"It was only 30 bucks," he replied quietly, "and I just couldn't pass it up."

This statement fell from the mouth of a man who is the president of a large, well known corporation. He signs checks every month that are sent to vicious looking lawyers. At least two of those lawyers are charged with the sole responsibility of suing other manufacturers over copyright and patent infringements. So I stood there while he deleted files from his hard drive and reformatted the three or four original program disks and his backups. We continued talking while he did so, and I discovered from the conversation that his son, who owns a 1040 STe, had been using an unregistered version of *MaxiMiser* for six months. Dad called the kid into the study and told him he couldn't use the Offline Mail Reader program anymore; at least until they sent off the $15 registration fee and received a key or a registered version in the mail.

Neither of them spoke to me for a month.

Who cares.

CodeHeads, Kuma, Gribnif, Lexicor, DMC, NewStar, HiSoft, ABC Solutions, Damien Jones, TLC, F-10, Shawn Smith, Clear Thinking, ST Club, Straight Edge, Migraph, Oregon Research Associates and a thousand others have provided us all with superb tools at reasonable prices. Stealing from them is a vile and trenchant insult. And people whom we repeatedly and grievously insult rarely come to our aid when we suddenly need and demand their support.

Have a nice day. Caveat Emptor.

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BUTTONZ AWARI

An Old Game in a New Setting

by Sam Van Wyck

A number of years ago, a well-meaning friend tried to drive me mad—and almost succeeded! He presented me with a heavy teakwood board into which two rows of five hollows were scooped. Two larger hollows were situated at each end and a bag of wooden balls completed the package. This was my first exposure to the addictively maddening (or maddeningly addictive) game of Awari. It's delight/frustration continues to this day.

The object is simple: to wind up with the most loot (largest number of balls). The mechanics are equally simple: grab a handful of balls (or stones, seeds, coins, whatever) from one of your pits and "sow" them in a counterclockwise circle around the board as far as they will go. If there are enough counters to completely circle the board, the starting pit is skipped. The end pit to your right is your scoring bin and everything that falls in there counts for you. Selfishly, you never drop anything into your opponents scoring pit! When there are no counters left on one side, the game ends and whoever has the most loot, wins. There are only one or two more very simple rules to learn before you're on your way to becoming an expert (or embarrassed, in the event your 8-year old rugrat consistently cleans your clock!).

It Doesn't Get Much Older or Simpler Than This

Early games had to be very simple in terms of equipment and if simplicity could be equated with age, Awari, also known as Mankala, must rank among the eldest. Even today, it is often played by simply scooping twelve depressions in the sand and picking up a handful of pebbles for counters. Despite the simplicity of the equipment, the fact that it remains a viable challenge suggests that the strategy must be complex—and it is.

The screen shot below shows the board used in the *BUTTONZ AWARI* simulation. Each of ten pits has been stocked with four counters while the scoring pits at the end are empty. A less demanding game may be played with three counters per pit. Ordinarily, the starting player is chosen by chance, but that option is not available here. Clicking on (ONE) starts the human first; (TWO), the computer or another human.

There are now the two rules of play to learn. First, if a move ends with a counter falling in your scoring pit, you get a second turn, after which it always becomes the opponent's turn. Second, if your last counter ends up in an empty pit on your side of the board and there are counters in your opponent's pit opposite, you may claim that counter plus those in your opponent's pit. All these are picked up and dropped into your end pit. Nothing is ever removed from a scoring pit.

After either side is completely emptied of counters, all that remain on the opposite side of the board are gathered and scored in that person's pit. High score wins. So much for the rules. Beginning a game against the computer is also simple.

Starting and Playing the Game

Pointing and clicking on the appropriate buttons chooses the mode of play. One may compete against the computer on three levels or against another human locally or via modem. A computer-computer demo may also be staged. Control is by mouse, keyboard or joystick. In addition to individual games, a "tournament" may be chosen consisting of from 3 to 13 games. Following tournament play, individual high scores may be saved to disk.

The function keys allow a number of choices, such as setting the beginning board from three stones per pit to four to increase the challenge and changing the difficulty level during play. Music may be set to loud, soft or (thankfully) non-existent. Various choices of screen color combinations are available as well as detailed help screens, which restate the rules of the game.

The experienced player seeking a greater challenge may activate a six-second timer. This choice is not for the faint-hearted nor the slow of wit. If a move is NOT completed within the allotted time, the turn is lost and if the computer is the opponent, so, probably, is the game. Think of it as a variation on speed chess! The time interval cannot be changed.

The Game of Awari

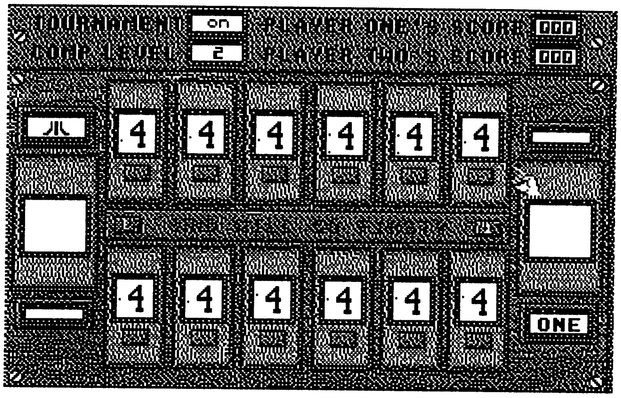
Once the mechanics of play are learned, the challenge, of course, is to become sufficiently proficient at the game to beat the computer or your human opponent. This is not intended as a tutorial on Awari but a few words of explanation may serve to explain the fascination that keeps this ancient game alive. The main challenge is to anticipate not only one's own plan of action but also that of the opponent, especially when adding stones to the pits on the opposite side of the board. All too often, a play which might add three stones to one's own score will create a scoring situation for the opponent resulting in a coup of a dozen points! Allowing the game to end with a large number of counters remaining on the opponent's side can turn a winning streak into a thumping loss!

Considering that a computer is ideally suited to this form of mathematical logic, the Expert level presents a formidable challenge, indeed. Don't even THINK of using the timer!

Modem or two-computer play is initiated from the main menu. Once a connection is made, the game proceeds in the same manner as in local mode. A CHAT screen may be called to allow conversation during play.

Other Thoughts and Commentary

The accompanying book is well printed and illustrated and covers the basics of play. The package arrives in a shiny purple/lavender bubble envelope that is (how to say this?) *impossible to overlook.* The disk is not copy protected but is individually serial numbered and keyed to the owner. In order



The Beginning Board. An easier version may be played with three counters per pit.

to play via modem, two disks *having different serial numbers* must be used. One cannot copy the program and have a friend use it at the other end, however, a "Buddy" pack of two disks is available at a discount.

Screen colors may be cycled through a number of changes by pressing [F8]. None of the choices appeared to be particularly attractive and the medium brown default seemed the best of the lot. Considering the Atari's ability to present excellent shadings and variations of color in Medium Resolution, it is a pity that so little attention was given to this aspect of the game. The board's harsh, almost monochromatic appearance is thoroughly functional but unimaginative.

The music that accompanies the opening screens and the play will probably be turned down or off after the first few minutes. It isn't bad, merely unnecessary.

In addition to modifying the screen colors, two changes would make the game even more enjoyable. The first would be a variable timer function. Six seconds simply isn't enough (for this reviewer, at least) but the idea of playing with a more liberal allotment is appealing. Additionally, a random start in addition to the player's choice would be nice.

BUTTONZ AWARI will run from both a floppy or hard drive. It does not like *Warp 9*, however, and this must be disabled, lest bombs appear on the screen. Its preferred resolution is Medium. One may boot in Low, but the program switches back to Medium before running. It does not function in Mono (High).

The Credit Line

BUTTONZ AWARI is published by MajicSoft, Inc., 348 Meredith Square, Columbia SC 29223, 1-800-845-3070. It is the brainchild of John Stewart and Larry Scholz, both of whom are responsive to the telephone numbers listed in the book. List price for a single game is $39.95, while the two-disk Buddy Pak goes for $59.95.

Comments and questions to the reviewer, challenges and high score brags can be sent via GEnie to: S.VANWYCK1.

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CN Disks $4 each

Current Notes
ST Public Domain/Shareware Library

10 or more $3.50 each

December '93/January '94

#848: Arka, a monochrome Arkanoid game; **Sound Search**, a musical concentration game.

#849: Break it!, old Chinese board game; **GTHOR 2.0**, one of the world's best Othello programs; **Mathematics With Sasha**, a multiplication learning program.

#850: The **Ancient Art of ASCII**, a picture translated into text; **Coyote Dave's Poker**, grab a chair, choose a table in the saloon and sit yourself down for some five card draw poker; **Shift II**, puzzle game from Germany.

#862: Bounce, sort of like bouncing ball space invaders; **ST Doodle 1.0b**, a nice monochrome paint program with an interactive user interface. Suitable for kids and adults. Over 40 drawing modes with several never before seen in a paint program. Shareware; **Search Me V2**, the ultimate word puzzle generator.

#851: Nostram, similar to the Bitmap Brothers game GODS; **Smash**, a nicely done Tennis game with a top-down view; **UK Match**, shareware from the UK, a very nicely done Icon Matching game.

#852: Elimouse Alphabet Game; Mr Dash, Boulder Dash clone from Germany (c/m); **Naarjek IV**, try and break into this computer!; Soma, excellent graphical block puzzle game; **SoS Hangman**, tweaked to run on a Falcon030 in the higher resolution modes; **Thurg 'N' Murg**, 50+ levels of action-packed arcade excitement.

#853: Fly-Ex, the ultimate computer bug? **Grav**, a rotate and thrust game similar in concept to Thrust or Oids; a **Ms PacMan** clone; **Plax**, destroy all the baddies trying to rot your teeth; **Teserae**, yet another Tetris clone; **Hot Wheels**, fast action, 1 or 2-player, car racing game.

#854: Jurassic, a little exercise in using computer from Jurassic park; **Lunacy 3.1**, excellent Tetris clone; **Pure Logic**, nice logical type game; **Reaction II**, a much improved version of Reaction, a strategy board game; **Space!**, game for 1 or 2 players, similar to the old Space War genre, complete with hyperspace, expanded universe, etc; **Thingy**, a funky little sound and colour proggy; **LIFE Bugs**, a simulation of life.

#855: Droid, fight your way through the hordes of enemy robots and artillery; **Triad**, a space strategy/arcade game for 1 or 2 players; **Warship** (Broadside), a 2-player naval strategy game.

#856: BatInvaders, a Space Invaders clone; **BatRisk**, a computer verison of the board game Risk; **BatSolitaire**, solitaire card game similar to the famous solitaire game found on Windows systems; **BatSub**, a SEAFOX clone; **DungeonLord**, an interesting hack and slash game with an interface reminiscent of Dungeon Master; **Maze**, 2-player action for Tag or Shoot games.

#857: Cold Revenge v1, space combat game for 1 to 4 computers and players; Desktop Entertainment Pac, Vol 1, 3 shareware game accs: **Puzzle Slide, Tic Tac Toe**, and **Flip-Flop; Gnu chess v3.1**, chess game with a lot of nice features, including a nicely done graphic interface.

#858: Grandad and the Quest for the Holey Vest. A tongue-in-cheek graphic adventure (a bit rude in places). Shareware.

#859: Midi Battle, a full screen (STE) 8-way scrollingtank/maze/shootemup style game for both the ST and the STE. The game is MIDI networkable for head to head battles between 2 players.

#860/#861 IBS Pegasus, a game of outer space colonization. You command a ship and must deal with all aspects of running the ship while getting to your colonization destination. The fate of mankind is in your hands. This is a two-disk set. You must have both to play this game. Shareware from Deto Soft.

#863: Word Quest (v3.10), a word search puzzle maker. Should run on Falcon030 or TT030. Commercial product now distributable as shareware! Includes two sets of ready-to-use puzzles. (C/M)

#864: Uncle Carl Utilities. BELEF22B v.2.02b, the Universal Compression Utility Shell, allows you to convert any of your archive files from ANY one format to another! **HeidiSeek** v.2.07a, the file finding and maintenance utility, allows you to search individual or consecutive drives for ANY file that matches YOUR search string. **ProFile!** v.1.01c, the Floppy and Hard Disk Librarian, allows you to scan ALL directories and save that information to any of 3 possible file formats! **ProLock!** v.1.05 allows you to lock access to your computer by entering password.

#865: AtariWorks No. 2. AtariWorks Scrapbook file utility; AtariWorks Small Frames; AW_TXTFX details for creating 3 text effects including drop-caps; 2_COLUMN, a tutorial on creating 2 column documents; AW_94CAL, the 1994 calendar; AW_FLORA, 28 floral graphics; AW_ALIN2, template for a landscape border on 1" margins; and GEnie Speedo GDOS messages 7/15/93 to 8/18/93.

#866: AtariWorks No. 3. GEnie AW messages (9/13/93-11/5/93); AW_PRALN, template for AW printer alignment and tutorial on alignment technique; AW_WDING, extended character set from ASCII 127 thru 255 plus the complete More Wingbats character set; AW_POPUP, "popup" dimensional Holiday table decoration. AW_PATCH, a ZAP file to patch HotWire; DINGBATS, character map of ITC Zapf Dingbat font; WKS_INVC, custom invoice with nice graphic borders.

#867: TripLink BBS V7.2. Easy to setup/run. BBS with 64 file areas, 64 message bases, up to 4.9 billion messags, terminal support for VT52, VT100, VT102, ANSI, IG and ASCII file protocals: xmodem/ymodem (and batch)/zmodem (and batch), built in verbose for ZIP / ARC / LZH files and you can extract files using the right TTP's.

#868: Teddy-Term2 telecomm program, a great program for those who don't need all the bells and whistles, just reliable and easy to use communications software; plus latest version of **MaxiMiser**, which will read messages and read them offline.

#869: Storm v1.00, shareware telecommunications program features multiple editing windows with true word-wrap, Basic script language, loadable file transfers and terminal emulations and background dialer, Xmodem, Ymodem, Zmodem and BPlus file transfers, VT100, Vidtex, and TTY terminal emulations. Docs incl. Plus V1.18 of **Mountain QWK** offline mail reader, now fully compatible with the Geneva Multitasking AES, MultiTOS, Speedo GDOS, and the Falcon030.

#870: Applications: Grammarian V1.1.0, check your documents for grammatical errors. (C/M) TT Compatible. **MyDraw** 1.10, German GEM graphics editor with full Speedo support. **No Frills** Label program V1.05, create, add, and edit an address file to use for reference or printing labels. **TeraDesk** v1.36, a very impressive replacement desktop.

#871: Version 3.0 of the **German to English translator.** This one fixes the background music problem and a few others.

#872: ARC/LZH Archiver. Everything you need to compress/uncompress ARC and LZH files.

#873: A Tribute to Frank. All the ST Update columns, the product reviews, and the articles written by Frank Sommers for CN from 1986 through 1993.

March 1994

#874/#875: Towers (2 disk set) a complete game with all the functions intact. Works on ST/STE/Mega/TT/Falcon computers; Req 1 MB.

#876: Color Games. LANDMINE-A strategy game based on a popular game for that other computer (c/m). MATCH__UP-For 1-4 players, this colorful game lets you test your memory skills (c). PEARL__93-Demo version of Super Dark Pearl 3D game with 10 levels. HTU-"Highscore Terminal Utility" maintains your high scores in your favorite video games.

#877: Second GFA Basic Manual. 3rd Edition. A collection of example code and text files that will help you with GFA Basic. All files compressed with ZIP.

#878: Binkleyterm. First full release of BinkleyTerm ST includes the Binkley program, docs, and optomized high speed serial routines.

#879: Utility #28: A host of small utilities provided by Atari Explore Online. **AFMT, ALASPEC, BIT, BITMASTR, BLKOUT, BOMB, BRDLFRMT, COLOREMU, COPYCART, CPBOOT, DISKDOUB, DSKFIL20, F11GEM, FASTER2, FCPY__III,**

FIXDISK, FLEXCOPY, FLIP, FMTUTIL, FORMATTP, KILLDRVB, KNUTSOFT, MUTATE, PCFORMAT, PD_QUICK, SALVAGE, SPECSTUF, STDUP, STMIROR2, SUPER, TASKCOPY, UNFORMAT, UNHIDER.

#880: Utility #29: More utilities provided by AEO. BELLTST2, B_BOOT, CDC220, DECOMPRE, DF_SUITE, DISKSCAN, DSKMAP, DSKSPEED, DSKSWICH, FASTFIND, FF, FOLDRSRT, GCLOCK, HDDIRECT, HDWBOOT, ICONES, KBD, LOAD_INF, MAKE512, MAPMEM, MEMCHECK, MEMFREE, MEMTEST, MINIVIEW, RESET, RSC_VIEW, SEL_PROG, TOS_VERS.

#881: Utility #30: Still more utilities from AEO plus others. ARDVARK, AUTO_SET, BKITE110, BOOTSIE, CLEO, CPP2, JOSHUA, SDDFR_12, SHORTBIN, SINF158, SPLITIT, SUPRSHUF, TIMECODE, TVST15, UNDOUB, UNIX2DOS, UNIXFLOP, VECSHOW, WO

#882: Shocker2-Mono German shareware game. Manipulate the marble to get a hold of hearts in each level, avoiding the traps and monsters along the way. One or two-player mode. 100 levels, with an extra 100 levels in two-player mode.

#883: Atari Works No.4: AWHP3ENV-template for printing addresses onto standard size envelopes to an HPIIIp printer, using Print Merge in Works. AW_ROTAT-Text rotation in AtariWorks. AW_HMINV-AtariWorks Home Inventory Database template and tutorial. AWNO10MP-How to print #10 Envelopes on the Hewlett Packard LaserJet 4 MP. AW_FNFNT-17 Calamus fonts converted to GEM fonts for use with AW. CN_DATA-Includes 1993 CN index, Atari vendors, Atari retail stores, and CN Library.

#884: Marcel V2.2-The Marcel Word Processor is now Shareware! Marcel v2.2 is packed with new features like paragraph sorting and line centering, PostScript output, revamped print options, improved text insertion, to name but a few.

April 1994

#885: Turbo BBS & HSModem. Turbo Board ST, Shareware V1.0, by William Miller. Here is a full-featured bulletin board system including everything you need to crate and run your own BBS. HSMODEM is the modular serial fix/serial port accelerator for all ST(e)/Mega ST(e)/TT/Falcon machines.

#886: ZX81 Emulator. This is V2. 1 of an emulator program for the legendary Sinclair ZX81 homecomputer of the year 1981. It should work on all Atari computers of the ST(E)/TT series. The emulator needs no hardware support, nevertheless nearly everything works and looks like on the original ZX81.

#887: Euler. Euler is a full–featured rival for the famous (and expensive) engineering program called Mathematica, while at the same time offering even more power in some major ways. Runs on all Ataris.

#888: The Printing Press. v.3.03 is an excellent mono–only program that will allow you to print out Letterhead, Envelopes (with both address and return address, and a graphic!), two types of disk labels, banners, and cards. Includes drivers for 9 and 24-pin printers. Geneva and ST/STe compatible.

#889: Utility #31. Two in One archive shell. v1.03 . Nice-looking archive shell for all types of archivers. Shareware from Germany (translated to English). Ocultar v.3.01b is a shareware AUTO folder program that will protect your hard disk from unauthorized access. ST/STe/TT compatible. Profile v1.5 is a superb "sysinfo" type utility by Mark Baines. Not too fancy, but the level of detail it displays about the 'innards' of your machine is unsurpassed. Freeware from the UK.

#890: CoNNect. Here is the latest version (2.46) of the CoNnect terminal emulator. This version has improved online help, faster transfers, etc. Still with internal x/y/zmodem/kermit, VT52/VT100/VT102/VT220/Tek4014, multitasking. Supports ALL ST/TT/Falcon modes.

May 1994

#891: MAGE Demo. This is an interactive demo of the MAGE game design package. It includes a small game that you can modify using the included editors. If you have ever wanted to design your own games, you may want to take a look at this disk.

#892: Teddy TERM and BAT100. BAT100 is a VT102 terminal emulator for ST computers. XMODEM send and receive are supported. A real–time clock and connect time clock can be displayed. Baud rates up-to 19200 are handled. Screen scrolling at 9600 can be supported without delay. The fastest and best tested program available. **Teddy–TERM** v2.12 is a complete communications terminal for the Atari ST, STE, TT, & Falcon030. Supports full 16 colour ANSI & VT52 emulation (in minimum 16 colour 640x200 screen modes) with intelligent ANSI in 4 or 2 color modes. This version has too many new features to list. VT100 emulation now supported.

#893: Utility No. 32. Clock, Freeware DA analog clock. **Everest** v3.2 (English), an easy to learn ASCII text editor that runs with all Atari 680x0 computers and with all known graphic cards (except ST Low Res (320*200)). Fast scrolling on all models, with or without the blitter. No cursor overrun (or simular annoying glitches). Standard GEM Interface. Turbo C Editor compatible keyboard shortcuts. No external RSC file, so Everest is well suited to residing outside folders on the route directory. GEM Clipboard Support. **Memory Watch**, v2, program/accessory will show you graphically memory allocation on your system. **Neo to Degas**, NEO2PC1.TOS, converts NEOChrome files to DEGAS PC1 file format. **Pen Pal**, v1.0, is an easy to use text editor that runs in any resolution (640 x 200 or greater) on any Atari ST/TT/Falcon system. Pen Pal is fast, offers instantaneous text reformatting, supports the system clipboard, is capable of multitasking, and runs in a movable window. **Revenge Document Displayer** v3.20, shareware from the UK, loads of new features including hex dumps, upto 100 bookmarks with save/load capability, fully adjustable block marking, special version optimised for use on 68030 machines (TT/Falcon), many bug fixes, and a great new installation program. **R–Gon** v1.2 screen saver; new version is a bit smoother, and has some new commands. **WhatIs**, v6.7, will identify 160+ file types including RTF format.

#894: Utility No. 33. ESSCODE, v5.06, GEM–based UUencoder/decoder and BTOA encoder/decoder. This basically allows you to convert a binary file to ASCII (to email to someone?) and convert that ASCII file back to binary. **LEDPANEL**, shows you which drive is being accessed and blinks at you, just like an LED. Mono Only! **LHarc**, v3.01 of the popular archiver for the ST, now works properly with Geneva. Includes English versions of both the executables and documentation. Also includes the new LHarc shell (version 3.00) which is in English only. LHarc works on all STs. New version provides almost a 50% speed advantage to its predecessor (v2.20). **Splitter** v2.0, splits big files for much easier distribution across floppy disks. Splitter breaks large files into smaller blocks, and then rebuilds them to their original form.

#895: Escape This is another PAC program released to shareware. It is a one player Graphic adventure with digitized sounds and graphics. Color monitor, one meg. Works on all Ataris.

#896: AIM Version 3.1. Atari Image Manager v3.1. Sophisticated image manipulation program. Reads IMG, PI?, TIFF, GIF, and more. Public domain.

#897: Medieval Chess. This is a one– or two–player chess game with battles. Works on all Ataris with a Color monitor, one Meg of RAM, and one or two joysticks. A JV Enterprise game now available as shareware.

#898: PAD V2.4. German shareware monochrome drawing program. Great effects, including some not found in commercial programs. The program is now in English, with limited English Docs.

#899: NeoDesk No. 1. Neodesk Icons, icons, icons, icons, icons....

#900: NeoDesk No. 2. More NeoDesk icons, plus "Secrets of NeoDesk," covering version 3.02 through 3.04 plus GEnie messages on NeoDesk.

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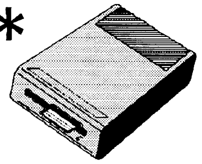

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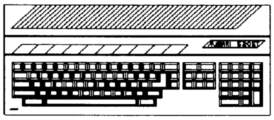

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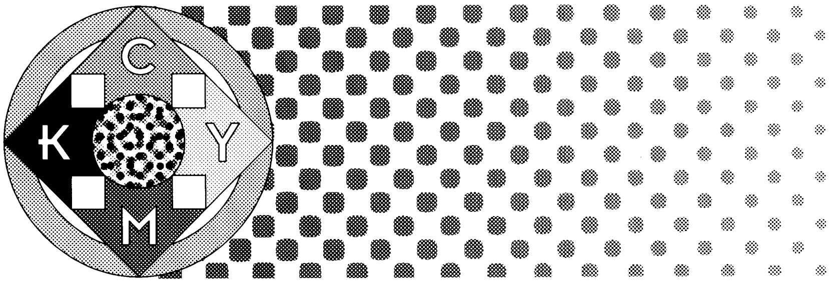

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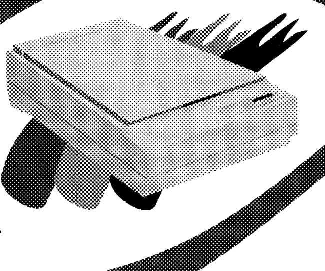

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